

Appendix A

RF Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Car Multimedia system

Trade Mark: XTRONS

Test Model: TQS710L

FCC ID: 2A66W-TQS710L

Environmental Conditions

Temperature:	23.8℃
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Nancy Li
Supervised by:	Hugo Chen

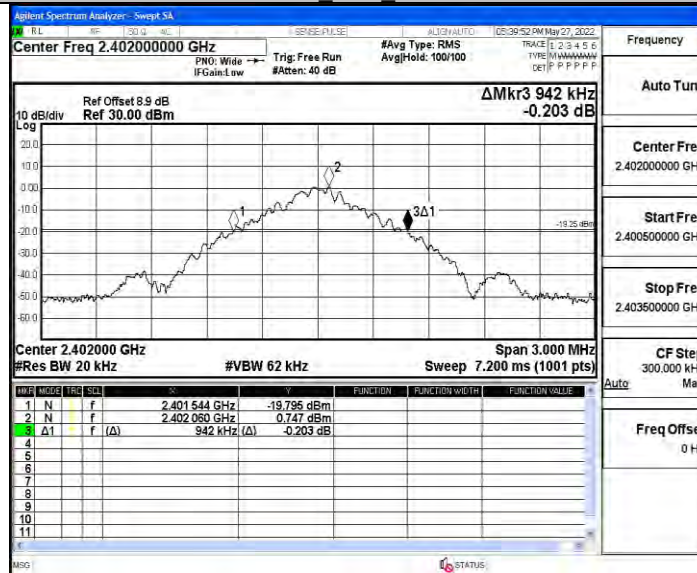
Appendix A: 20dB Emission Bandwidth

Test Result

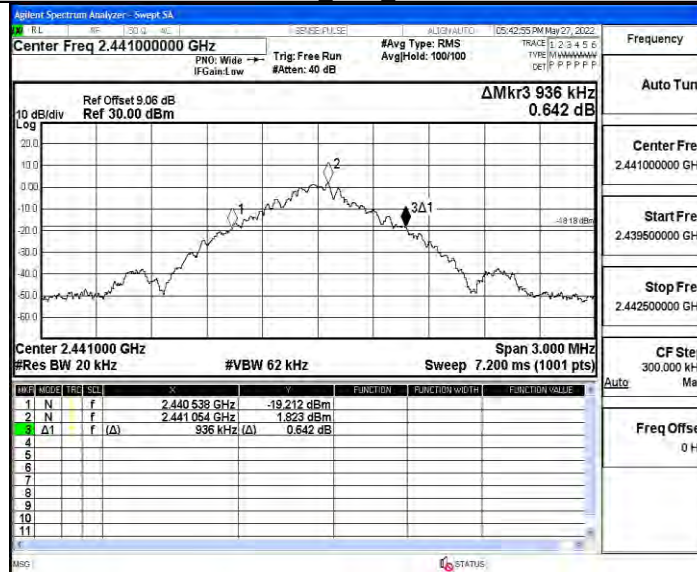
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.942	2401.544	2402.486	---	---
		2441	0.936	2440.538	2441.474	---	---
		2480	0.942	2479.529	2480.471	---	---
2DH5	Ant1	2402	1.323	2401.340	2402.663	---	---
		2441	1.335	2440.331	2441.666	---	---
		2480	1.341	2479.322	2480.663	---	---
3DH5	Ant1	2402	1.329	2401.334	2402.663	---	---
		2441	1.347	2440.319	2441.666	---	---
		2480	1.329	2479.319	2480.648	---	---

Test Graphs

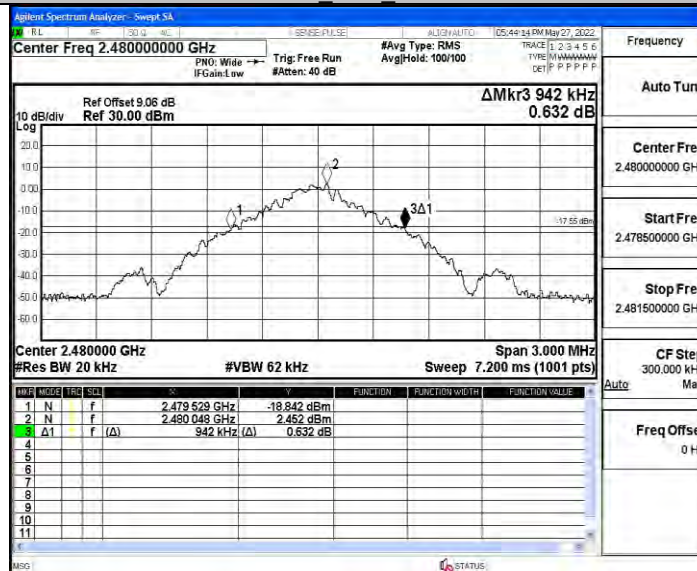
DH5_Ant1_2402



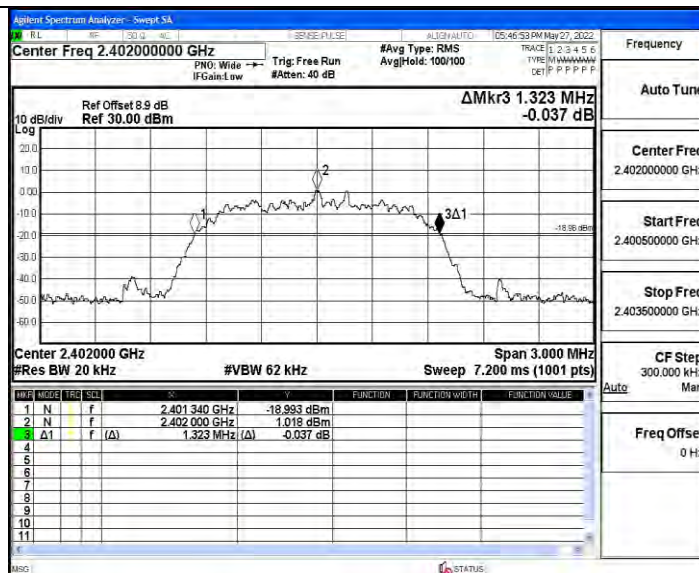
DH5_Ant1_2441



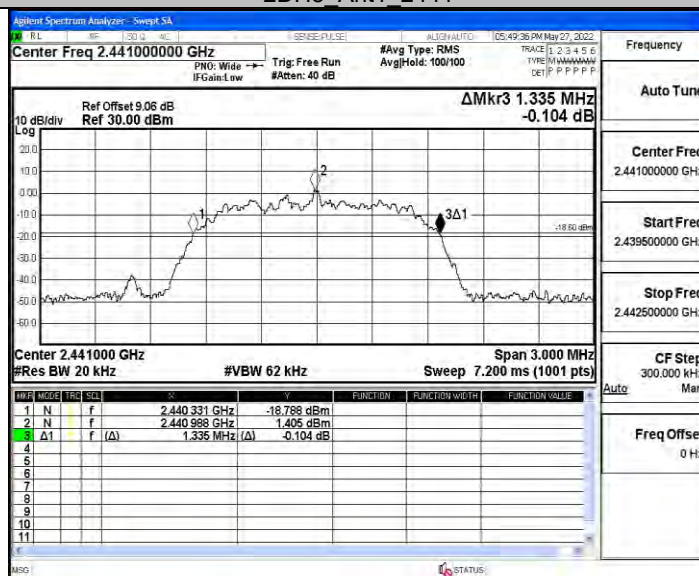
DH5_Ant1_2480



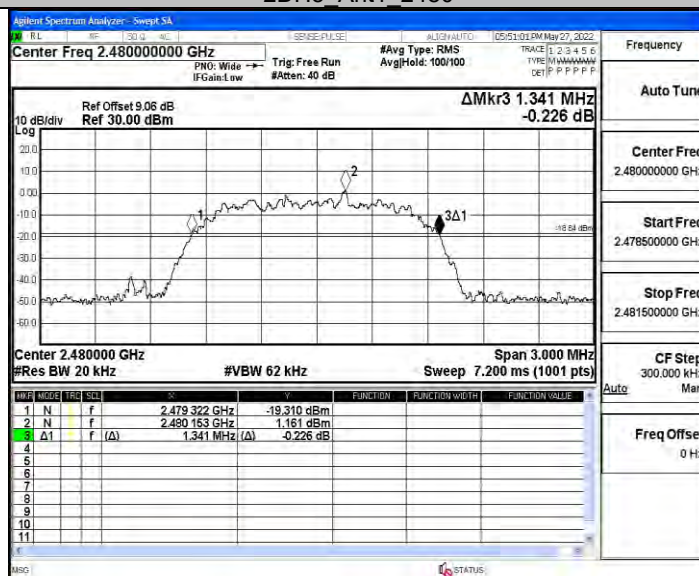
2DH5_Ant1_2402



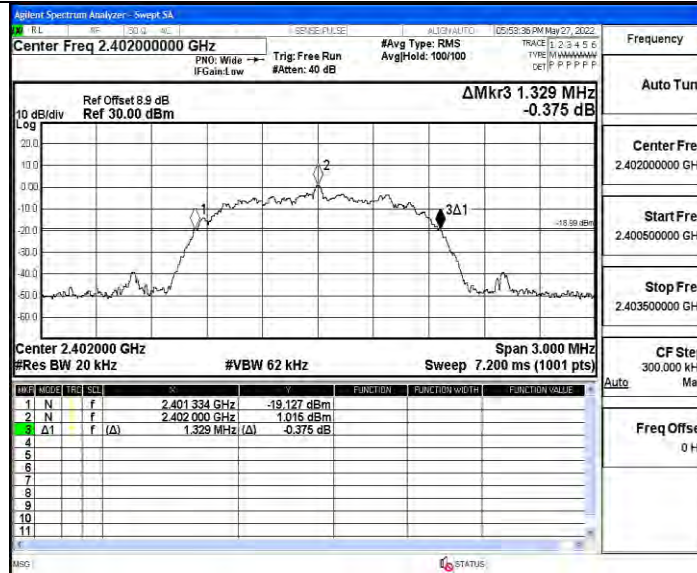
2DH5 Ant1 2441



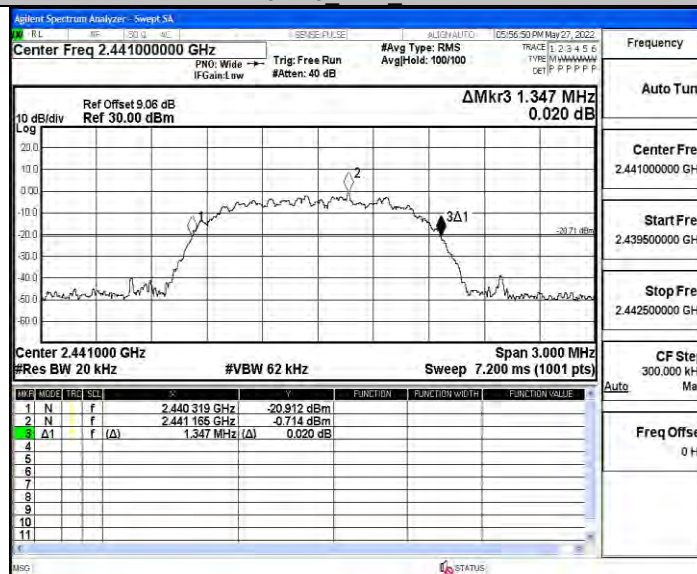
2DH5 Ant1 2480



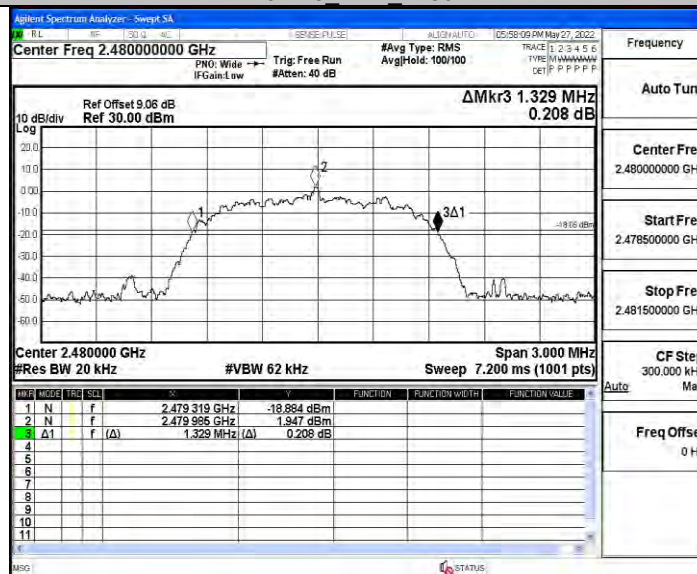
3DH5 Ant1 2402



3DH5_Ant1_2441



3DH5_Ant1_2480



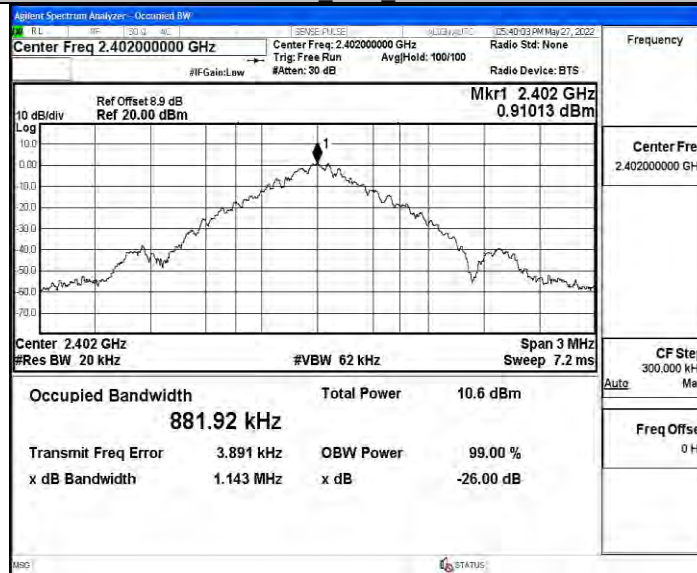
Appendix B: Occupied Channel Bandwidth

Test Result

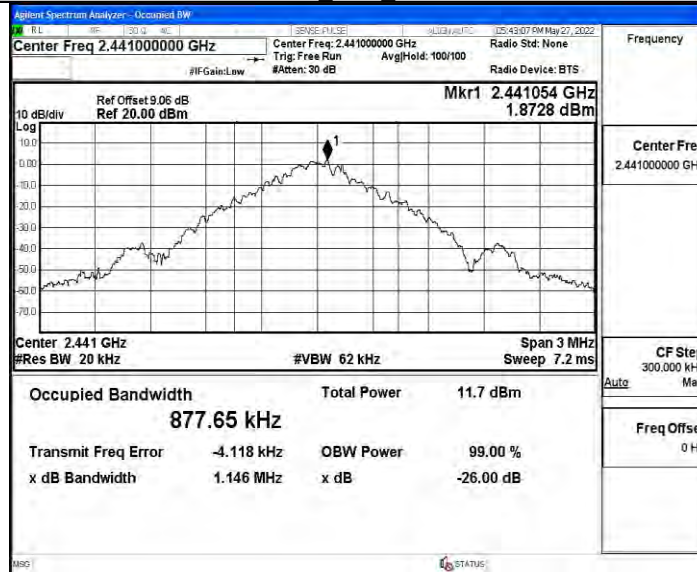
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.88192	2401.563	2402.445	---	---
		2441	0.87765	2440.557	2441.435	---	---
		2480	0.85891	2479.559	2480.418	---	---
2DH5	Ant1	2402	1.2135	2401.395	2402.609	---	---
		2441	1.2015	2440.395	2441.596	---	---
		2480	1.2024	2479.386	2480.589	---	---
3DH5	Ant1	2402	1.2092	2401.388	2402.597	---	---
		2441	1.2103	2440.381	2441.591	---	---
		2480	1.2058	2479.377	2480.583	---	---

Test Graphs

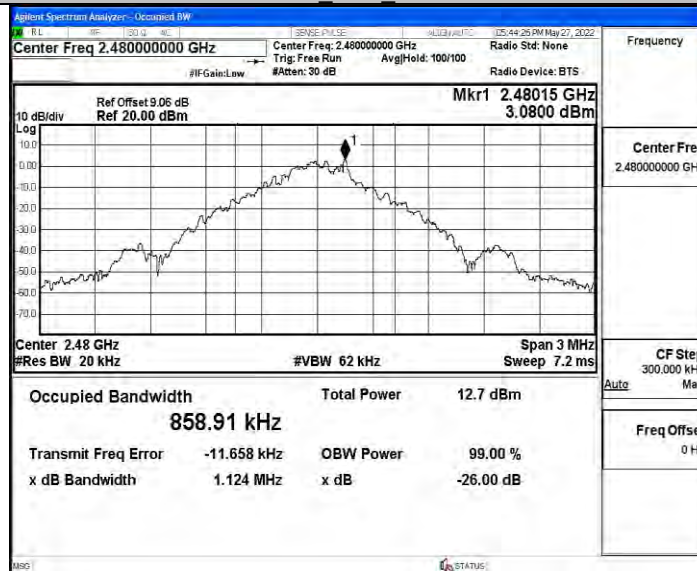
DH5_Ant1_2402



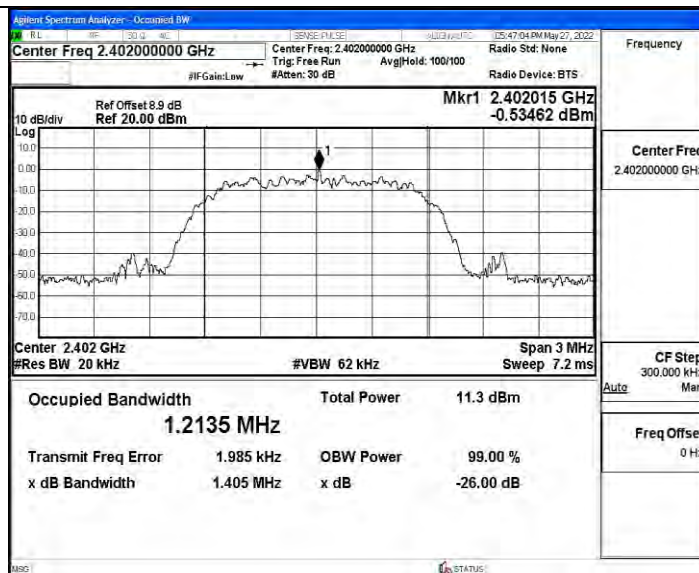
DH5_Ant1_2441



DH5_Ant1_2480



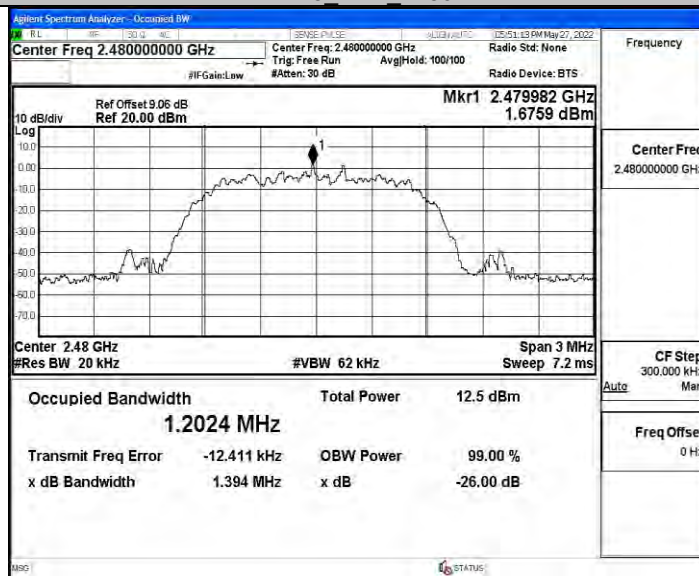
2DH5_Ant1_2402



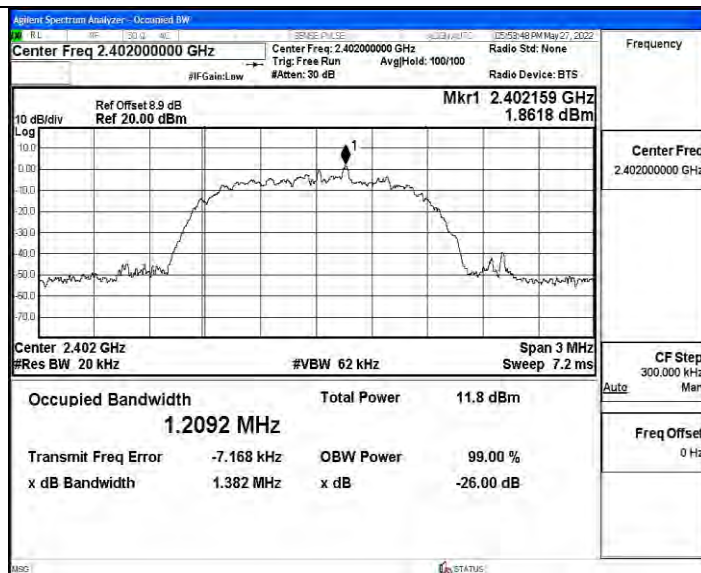
2DH5_Ant1_2441



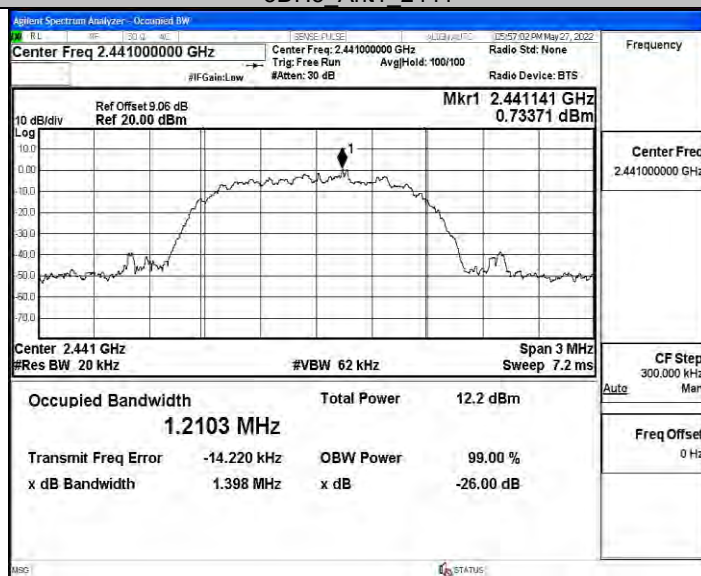
2DH5_Ant1_2480



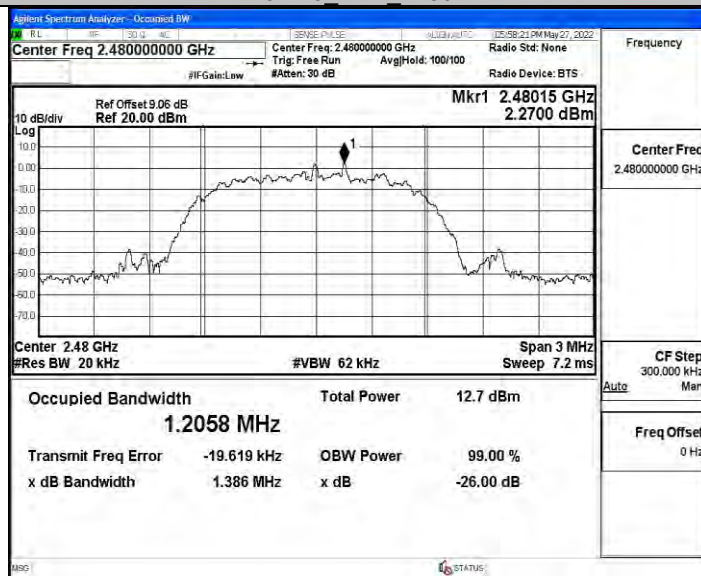
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

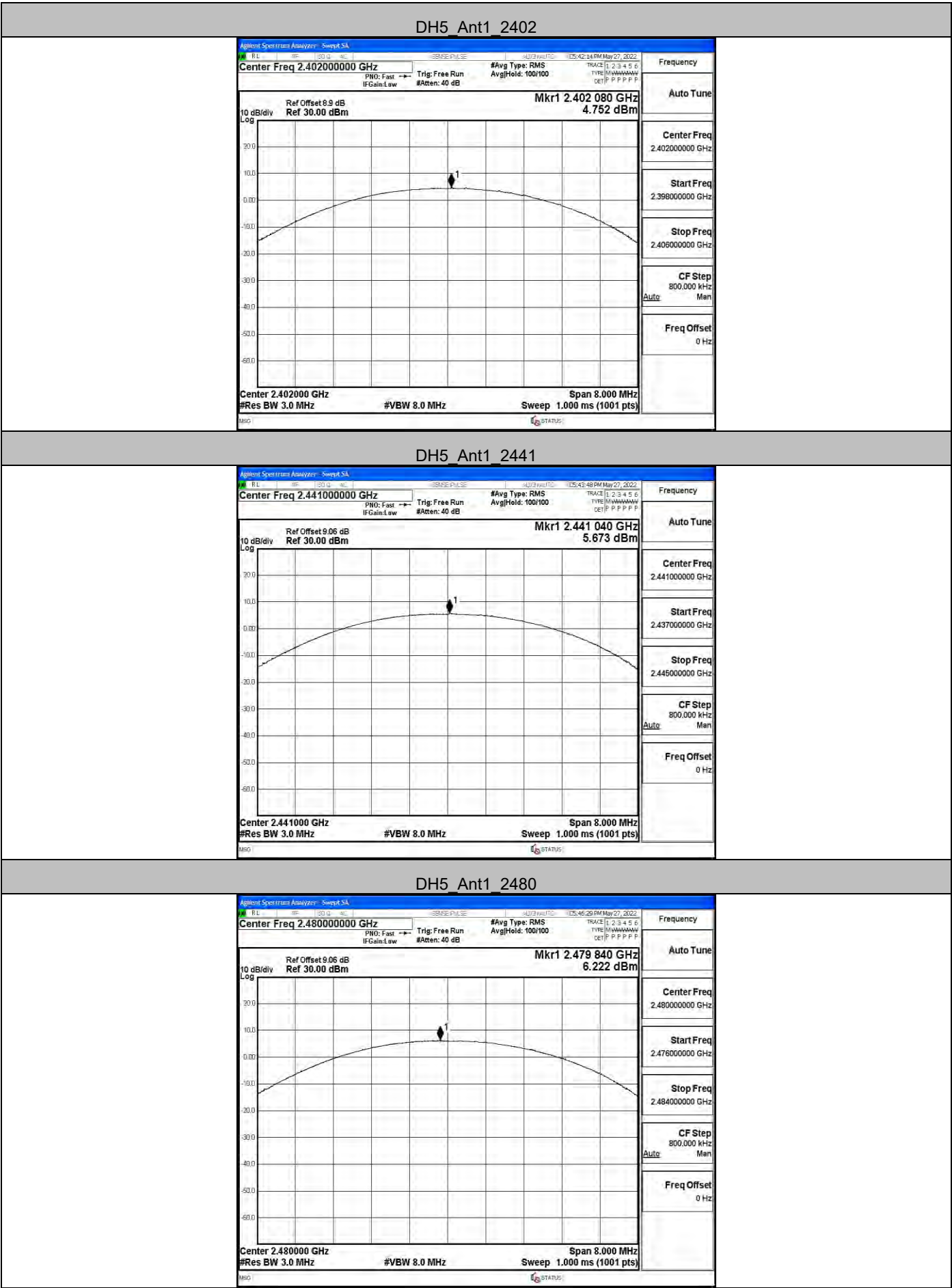


Appendix C: Maximum conducted output power

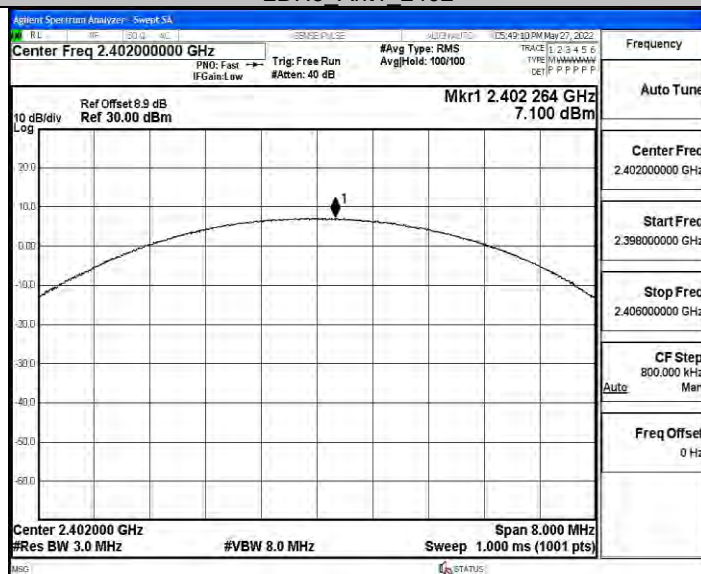
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	4.75	≤ 20.97	PASS
		2441	5.67	≤ 20.97	PASS
		2480	6.22	≤ 20.97	PASS
2DH5	Ant1	2402	7.1	≤ 20.97	PASS
		2441	7.68	≤ 20.97	PASS
		2480	7.95	≤ 20.97	PASS
3DH5	Ant1	2402	7.69	≤ 20.97	PASS
		2441	8.14	≤ 20.97	PASS
		2480	8.53	≤ 20.97	PASS

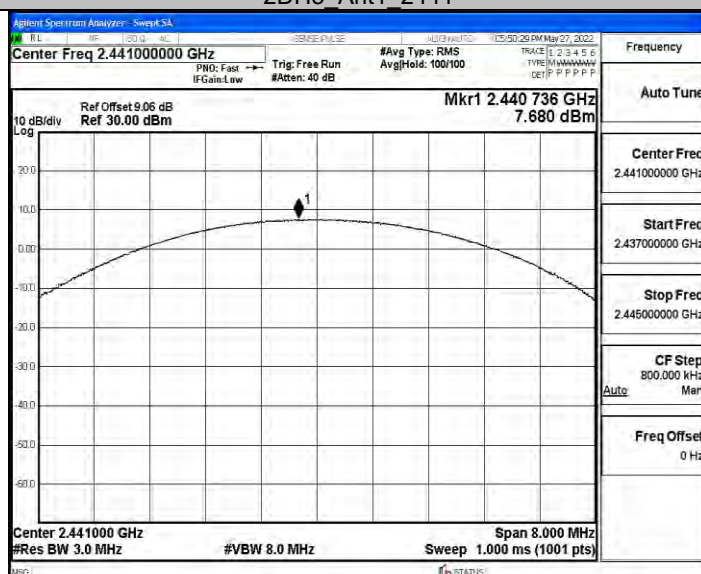
Test Graphs



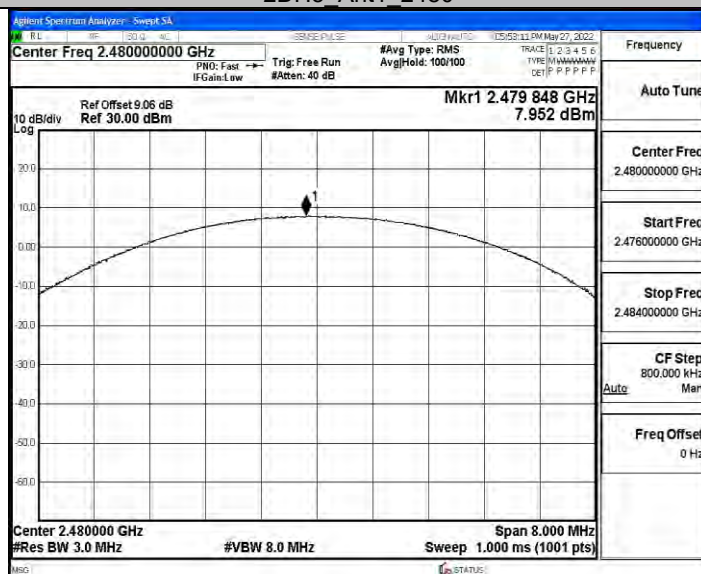
2DH5_Ant1_2402



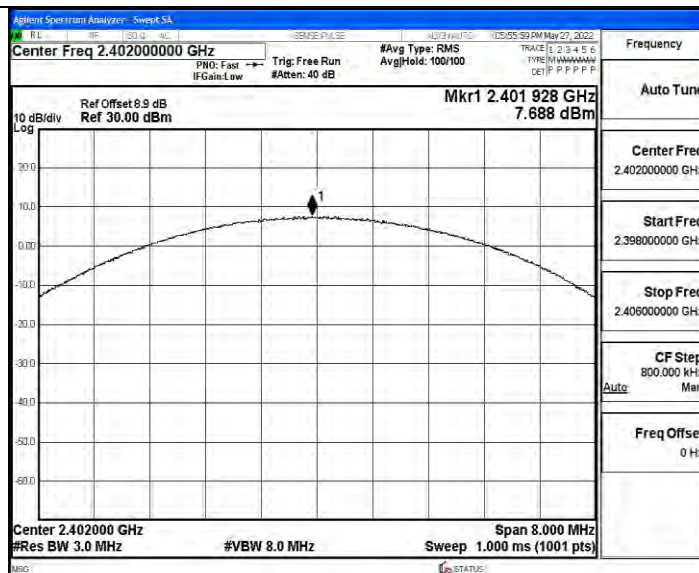
2DH5_Ant1_2441



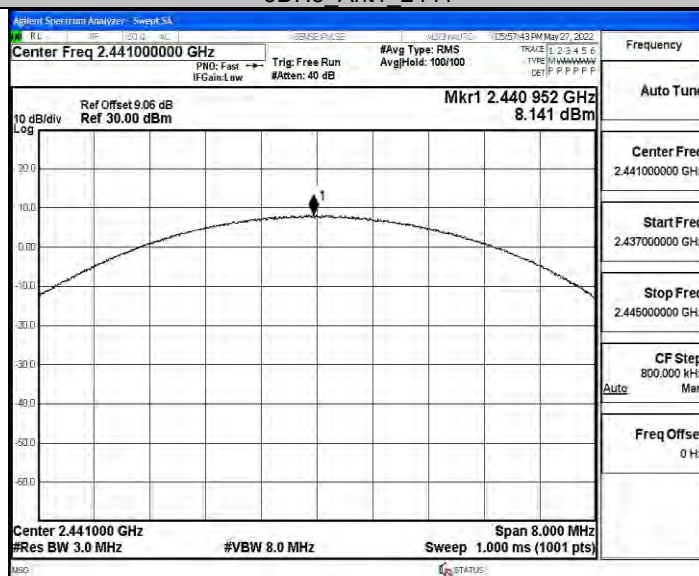
2DH5_Ant1_2480



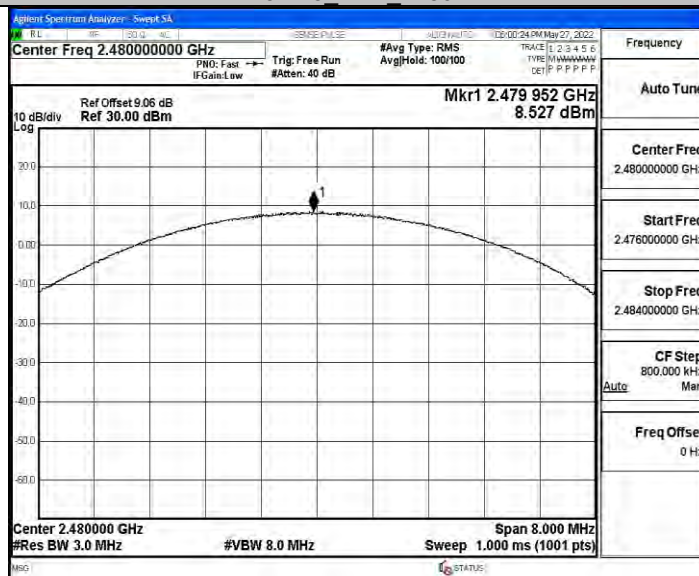
3DH5_Ant1_2402



3DH5 Ant1 2441



3DH5 Ant1 2480

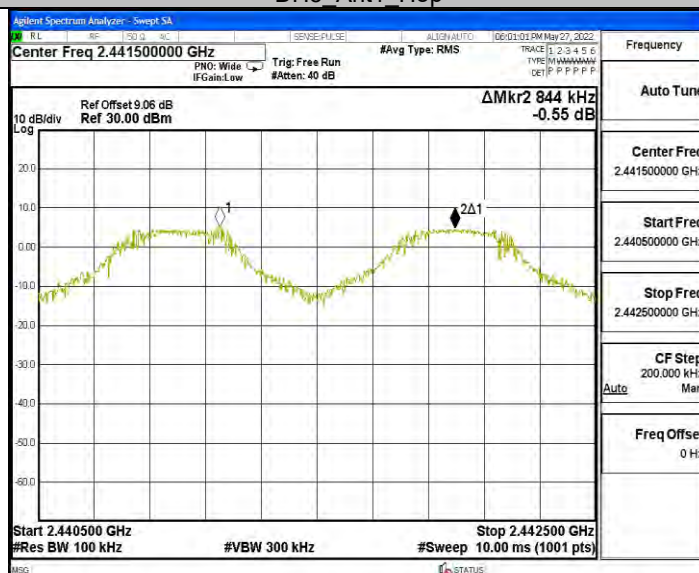


Appendix D: Carrier frequency separation

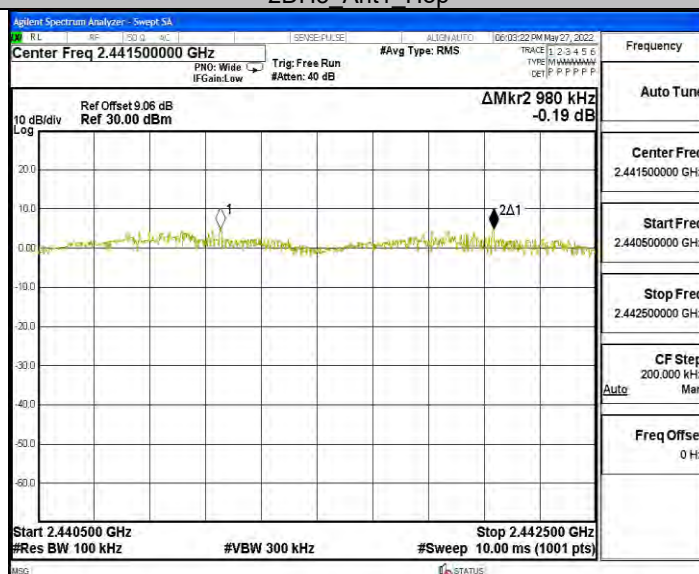
Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.844	≥ 0.628	PASS
2DH5	Ant1	Hop	0.98	≥ 0.894	PASS
3DH5	Ant1	Hop	0.98	≥ 0.898	PASS

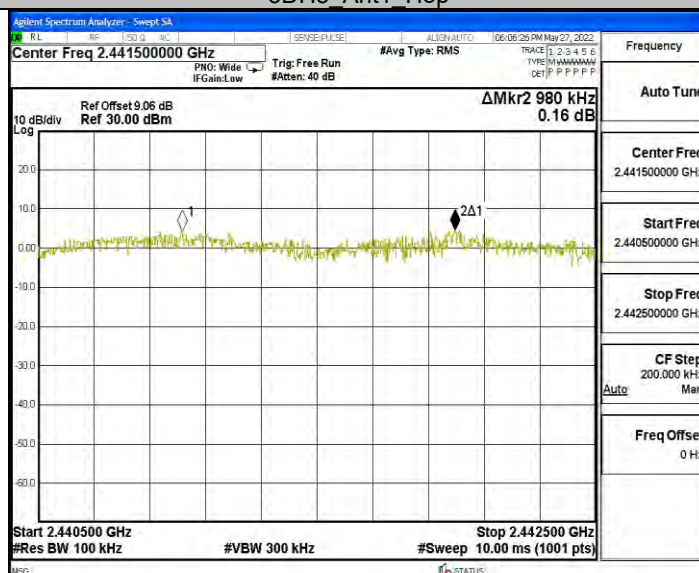
DH5_Ant1_Hop



2DH5 Ant1 Hop



3DH5 Ant1 Hop



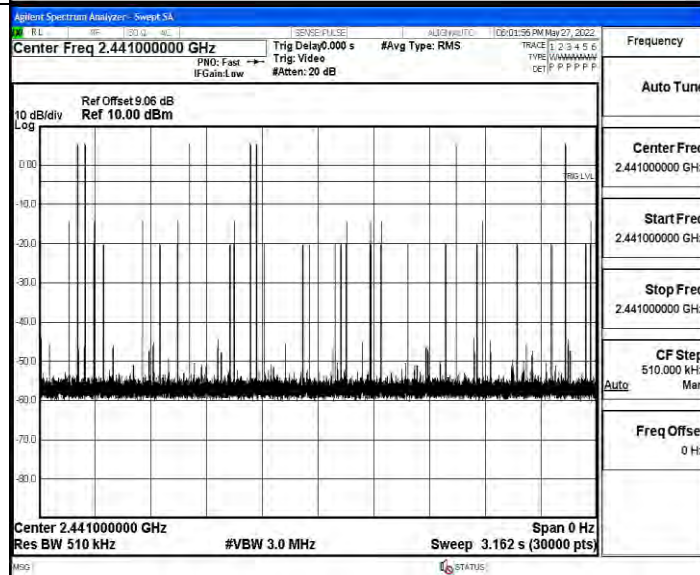
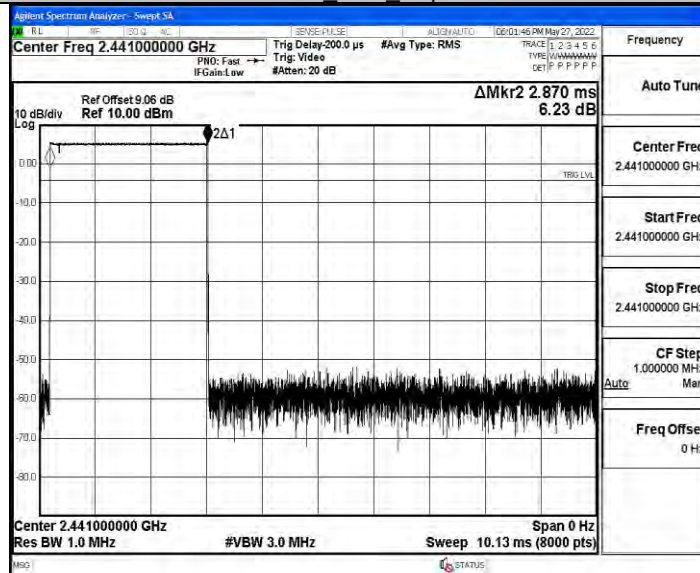
Appendix E: Time of occupancy

Test Result

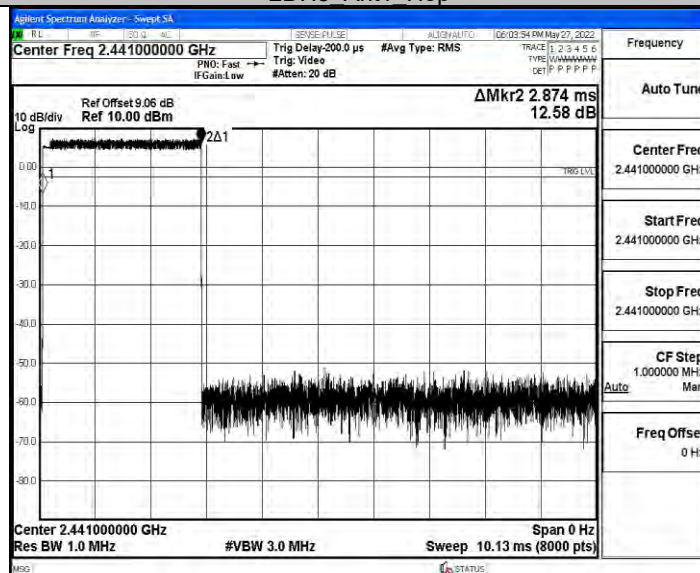
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.87	90	0.258	≤0.4	PASS
2DH5	Ant1	Hop	2.87	110	0.316	≤0.4	PASS
3DH5	Ant1	Hop	2.87	100	0.287	≤0.4	PASS

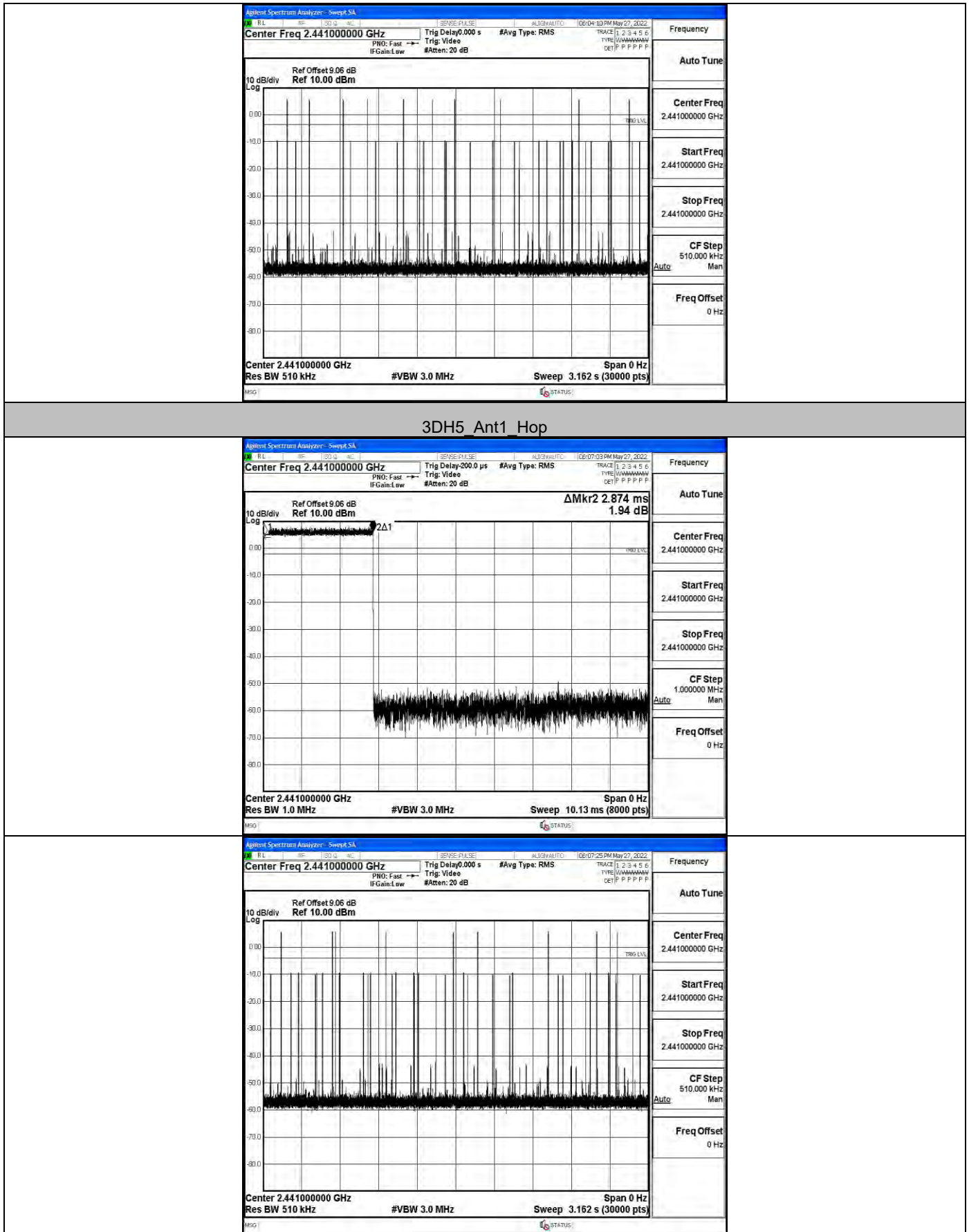
Test Graphs

DH5 Ant1 Hop



2DH5 Ant1 Hop





Appendix F: Number of hopping channels

Test Result

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs



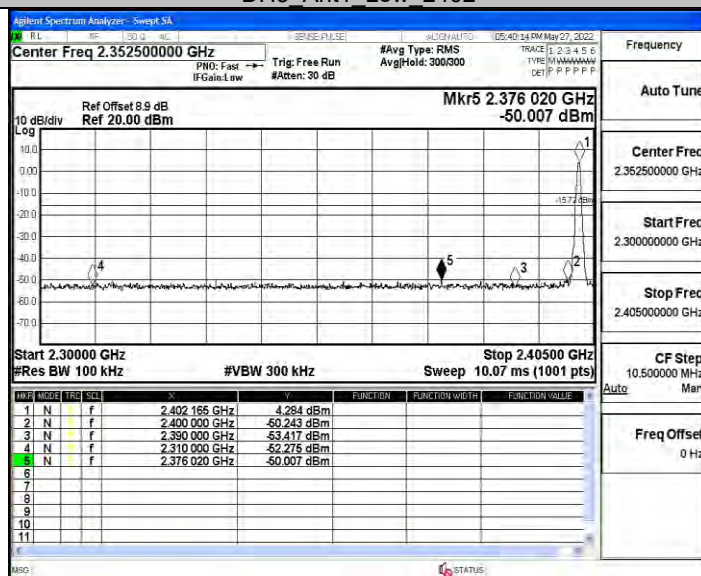
Appendix G: Band edge measurements

Test Result

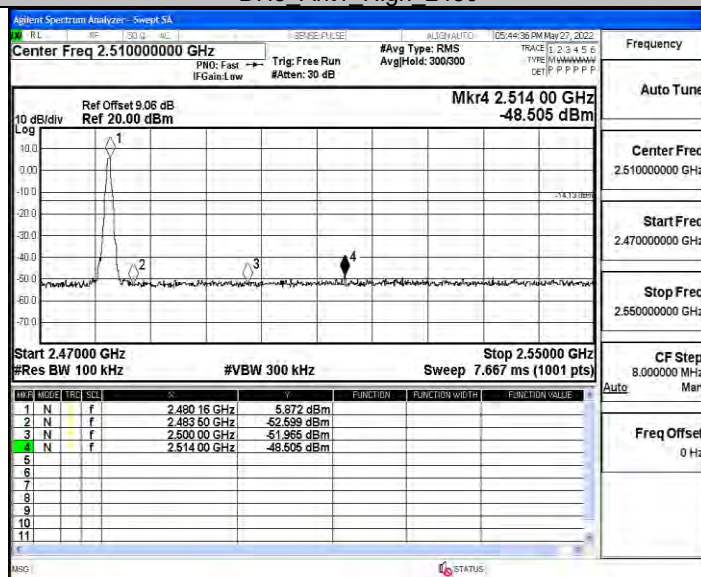
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.28	-50.01	≤ -15.72	PASS
		High	2480	5.87	-48.51	≤ -14.13	PASS
		Low	Hop_2402	3.54	-50.67	≤ -16.46	PASS
		High	Hop_2480	5.73	-48.42	≤ -14.28	PASS
2DH5	Ant1	Low	2402	3.65	-49.22	≤ -16.35	PASS
		High	2480	5.32	-48.24	≤ -14.68	PASS
		Low	Hop_2402	1.93	-51.18	≤ -18.07	PASS
		High	Hop_2480	3.43	-48.93	≤ -16.57	PASS
3DH5	Ant1	Low	2402	4.46	-50.21	≤ -15.54	PASS
		High	2480	5.46	-48.82	≤ -14.54	PASS
		Low	Hop_2402	3.74	-50.46	≤ -16.27	PASS
		High	Hop_2480	5.44	-49.45	≤ -14.56	PASS

Test Graphs

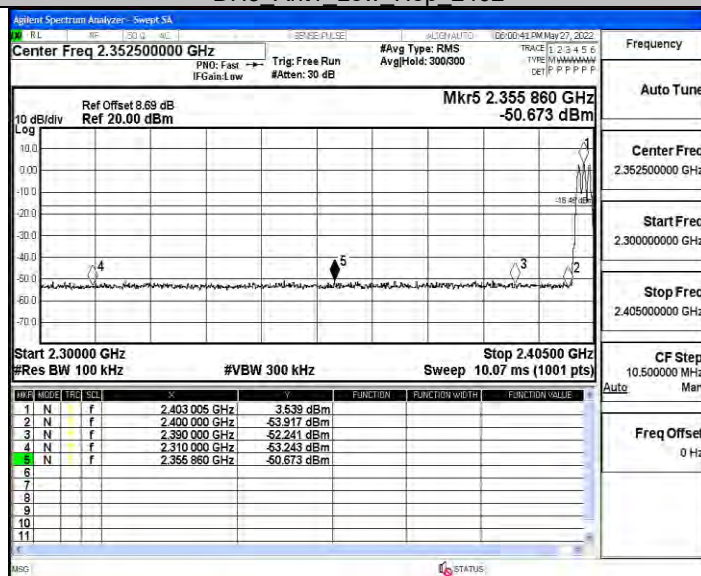
DH5_Ant1_Low_2402



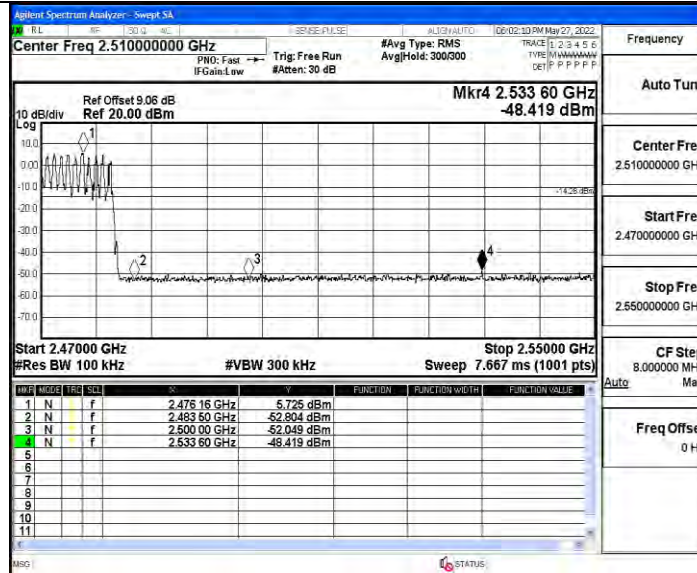
DH5_Ant1_High_2480



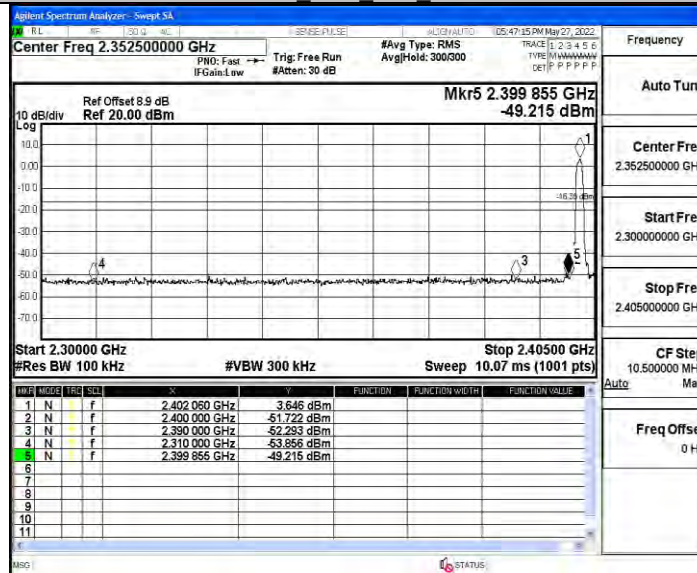
DH5_Ant1_Low_Hop_2402



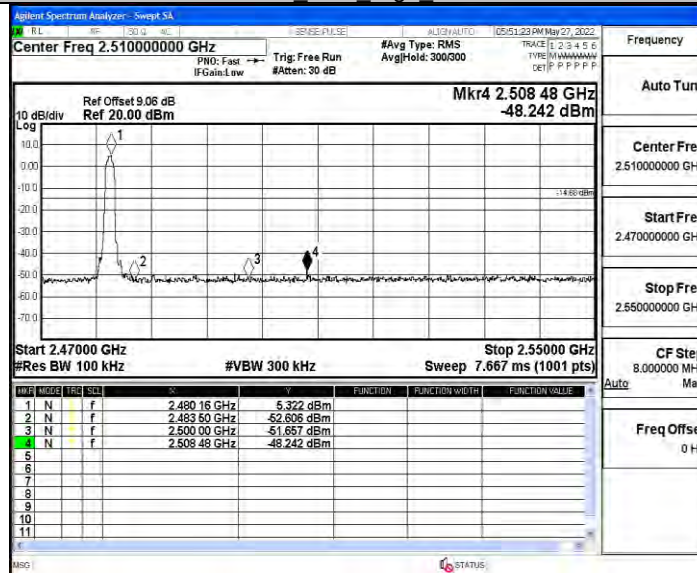
DH5_Ant1_High_Hop_2480



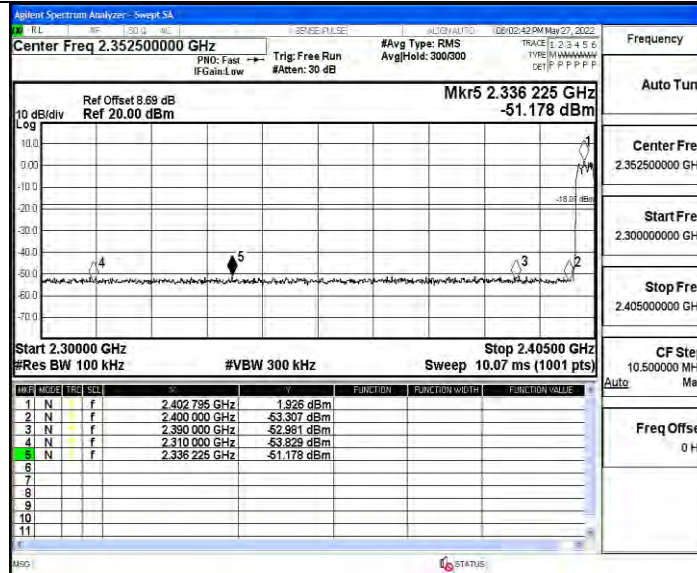
2DH5 Ant1 Low 2402



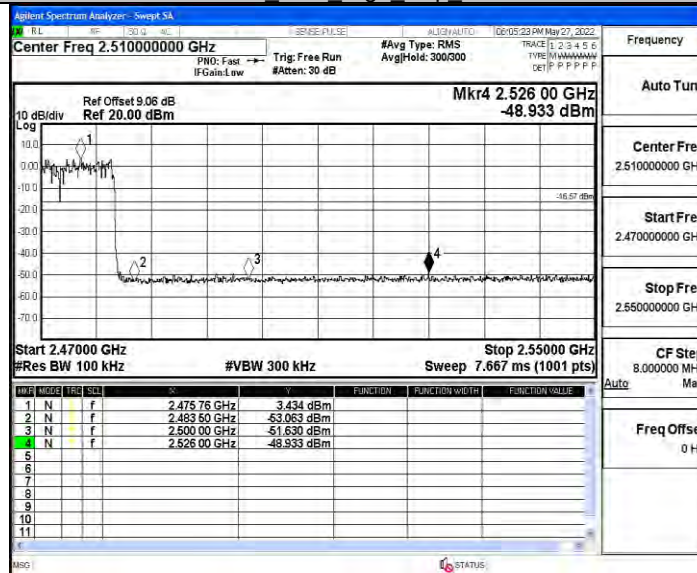
2DH5 Ant1 High 2480



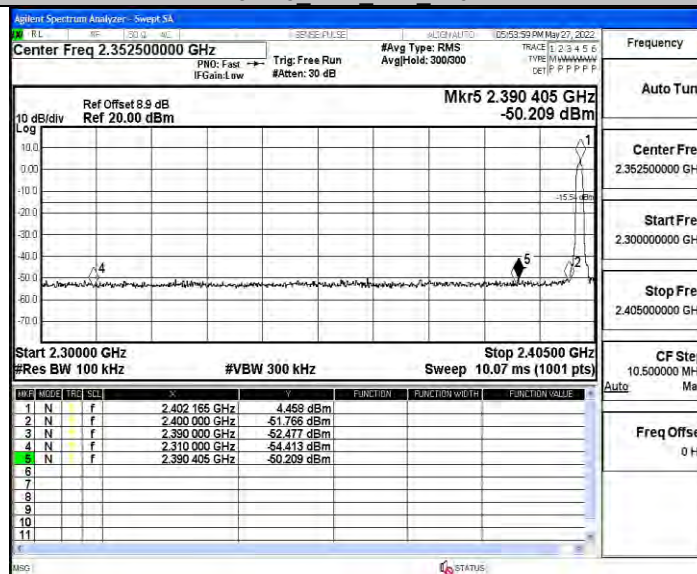
2DH5 Ant1 Low Hop 2402



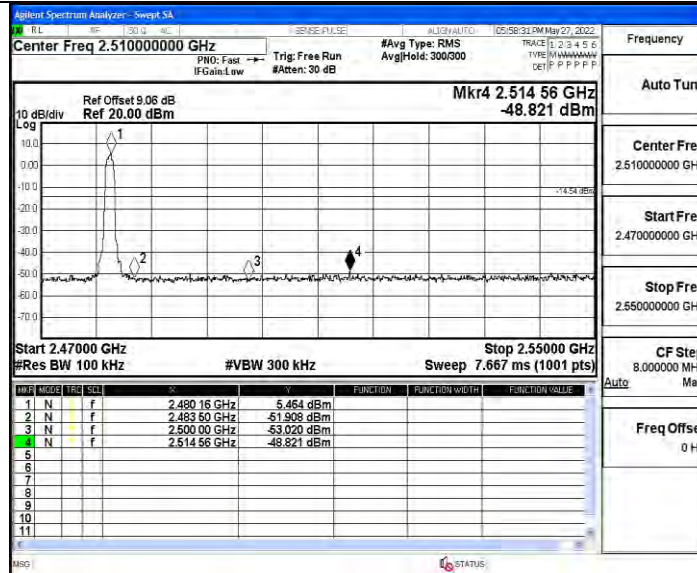
2DH5 Ant1 High Hop 2480



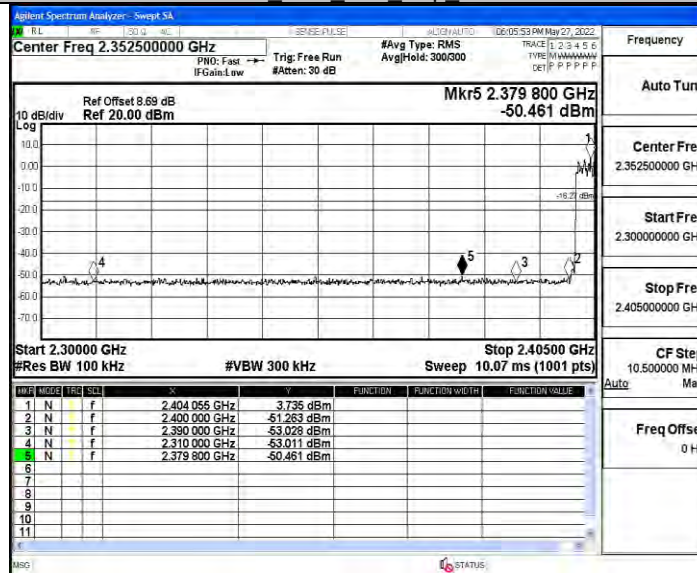
3DH5 Ant1 Low 2402



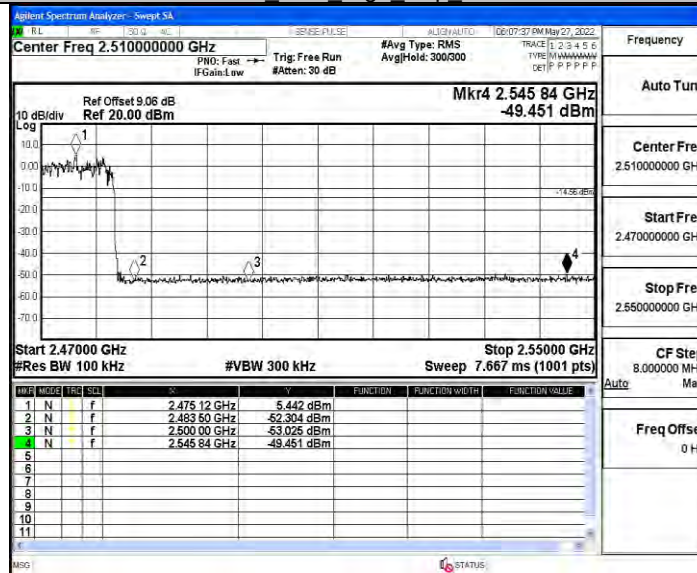
3DH5 Ant1 High 2480



3DH5 Ant1 Low Hop 2402



3DH5 Ant1 High Hop 2480

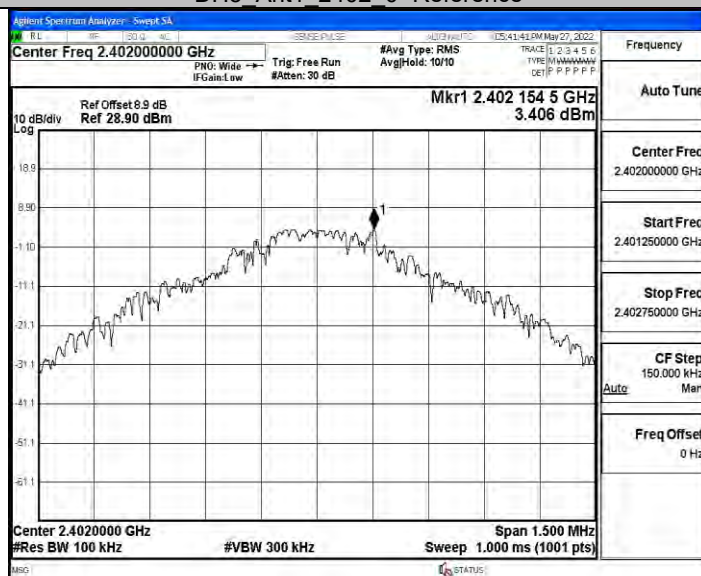


Appendix H: Conducted Spurious Emission Test Result

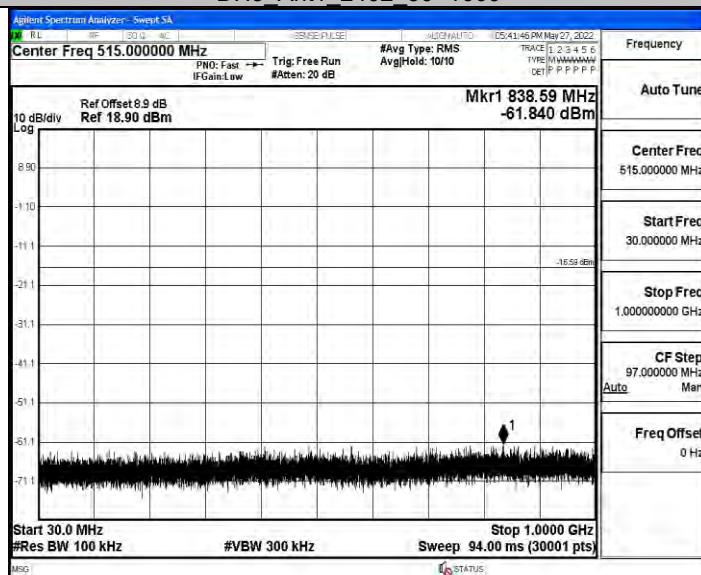
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	3.41	3.41	---	PASS
			30~1000	3.41	-61.84	≤-16.59	PASS
			1000~26500	3.41	-48.99	≤-16.59	PASS
		2441	Reference	4.69	4.69	---	PASS
			30~1000	4.69	-60.98	≤-15.31	PASS
			1000~26500	4.69	-49.76	≤-15.31	PASS
		2480	Reference	5.33	5.33	---	PASS
			30~1000	5.33	-61.2	≤-14.67	PASS
			1000~26500	5.33	-50.3	≤-14.67	PASS
2DH5	Ant1	2402	Reference	3.37	3.37	---	PASS
			30~1000	3.37	-61.88	≤-16.63	PASS
			1000~26500	3.37	-46.86	≤-16.63	PASS
		2441	Reference	3.99	3.99	---	PASS
			30~1000	3.99	-61.16	≤-16.01	PASS
			1000~26500	3.99	-47.9	≤-16.01	PASS
		2480	Reference	4.40	4.40	---	PASS
			30~1000	4.40	-60.28	≤-15.6	PASS
			1000~26500	4.40	-46.95	≤-15.6	PASS
3DH5	Ant1	2402	Reference	4.08	4.08	---	PASS
			30~1000	4.08	-61.58	≤-15.92	PASS
			1000~26500	4.08	-46.47	≤-15.92	PASS
		2441	Reference	3.20	3.20	---	PASS
			30~1000	3.20	-61.47	≤-16.8	PASS
			1000~26500	3.20	-47.31	≤-16.8	PASS
		2480	Reference	4.63	4.63	---	PASS
			30~1000	4.63	-60.35	≤-15.37	PASS
			1000~26500	4.63	-47.87	≤-15.37	PASS

Test Graphs

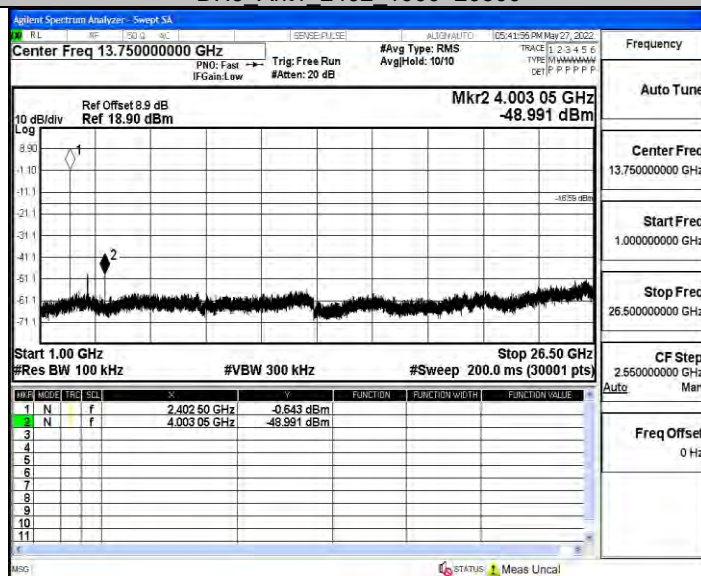
DH5_Ant1_2402_0~Reference



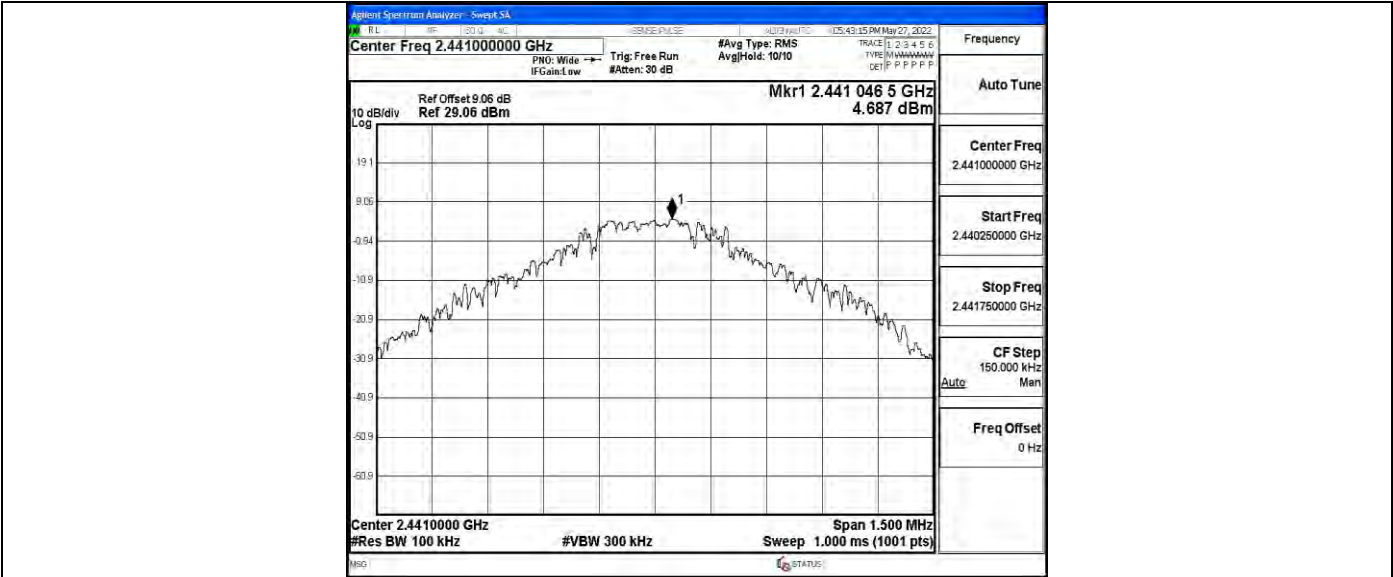
DH5_Ant1_2402_30~1000



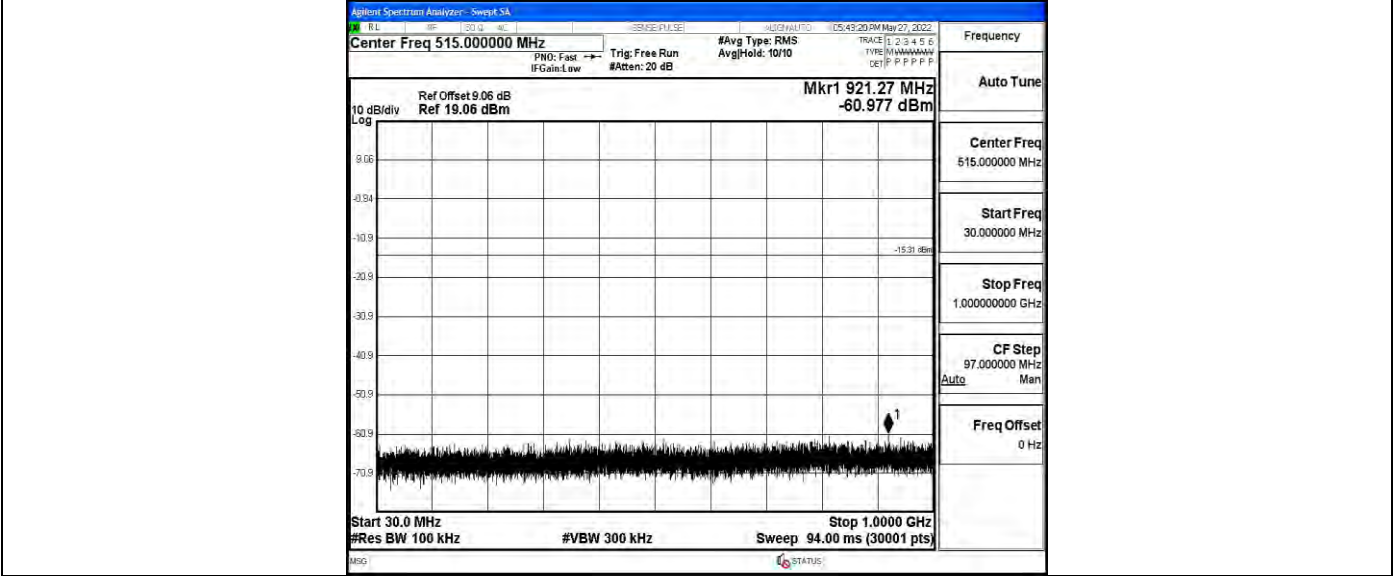
DH5_Ant1_2402_1000~26500



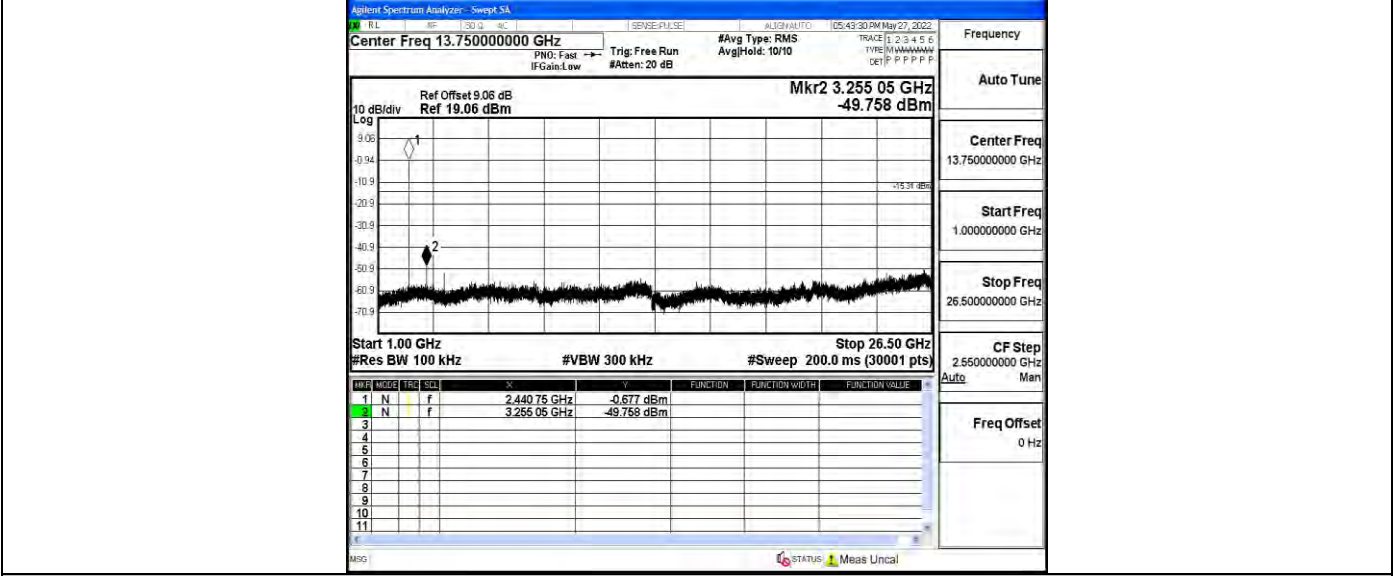
DH5_Ant1_2441_0~Reference



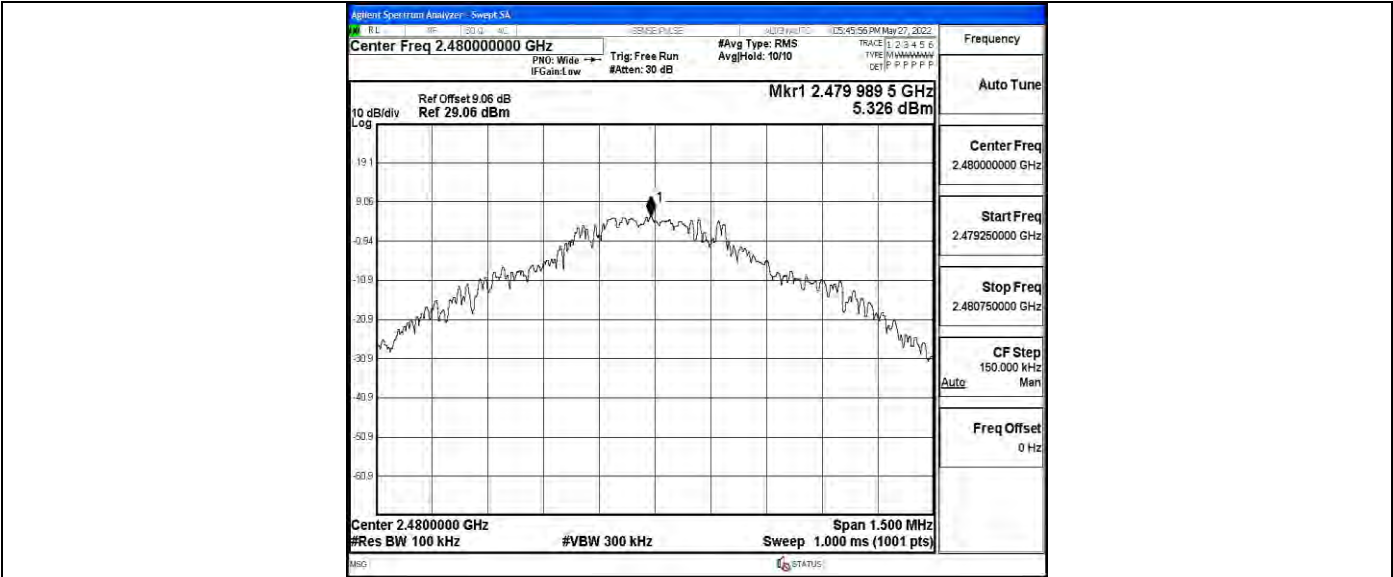
DH5_Ant1_2441_30~1000



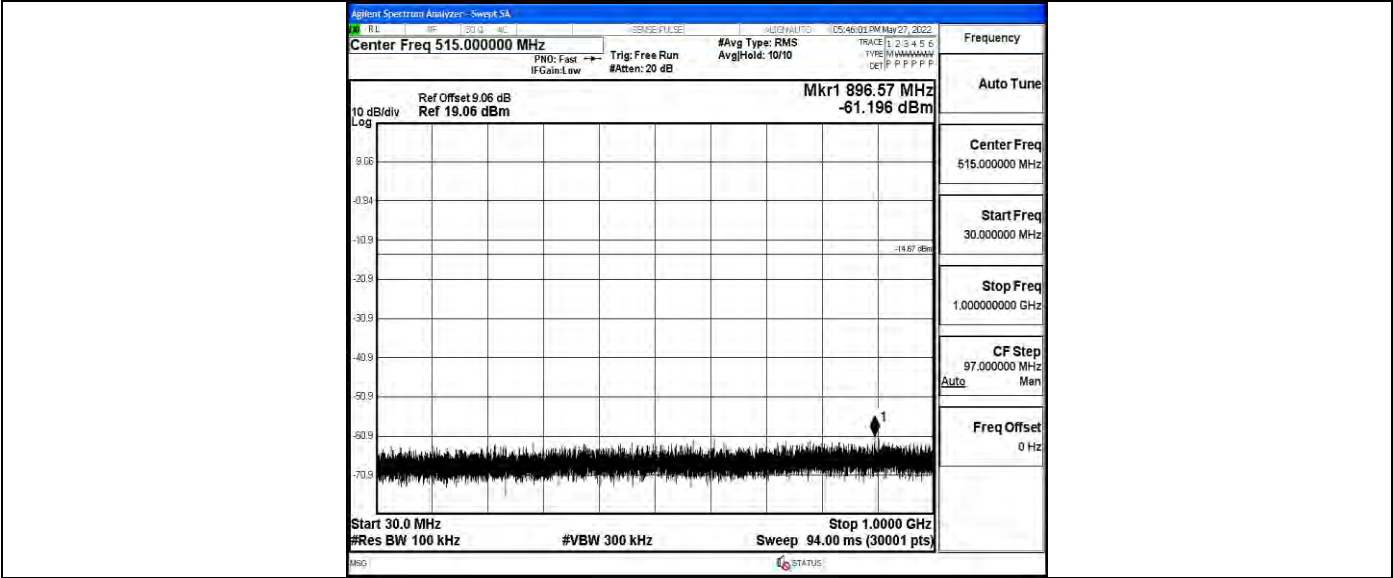
DH5_Ant1_2441_1000~26500



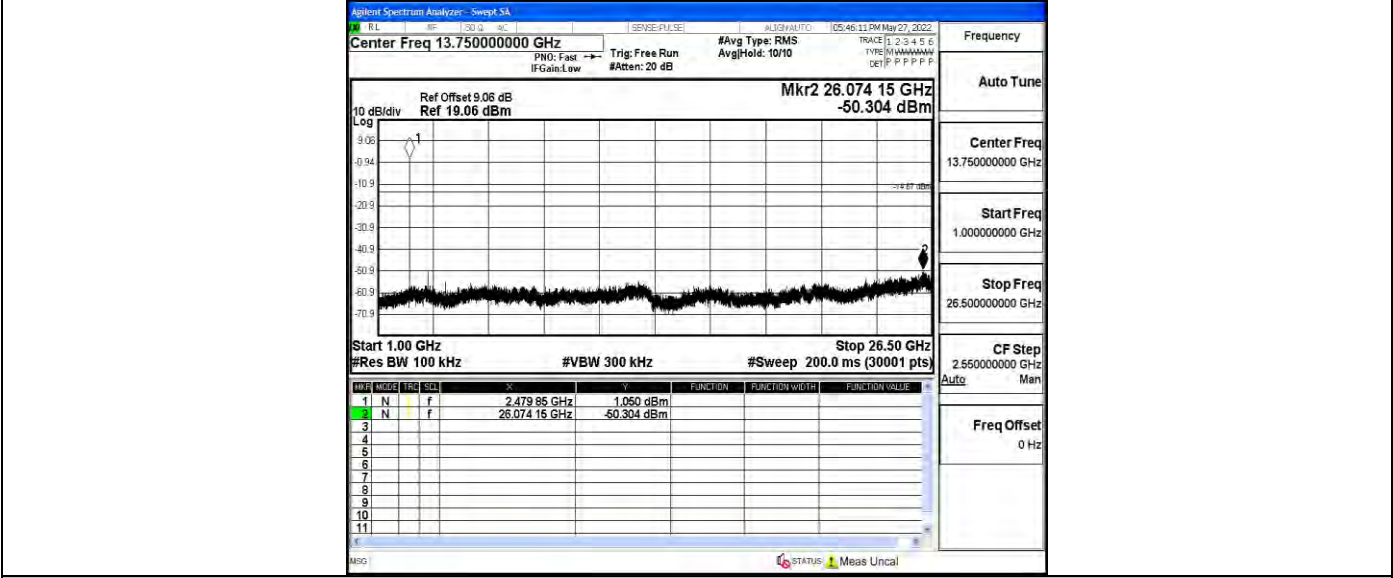
DH5_Ant1_2480_0~Reference



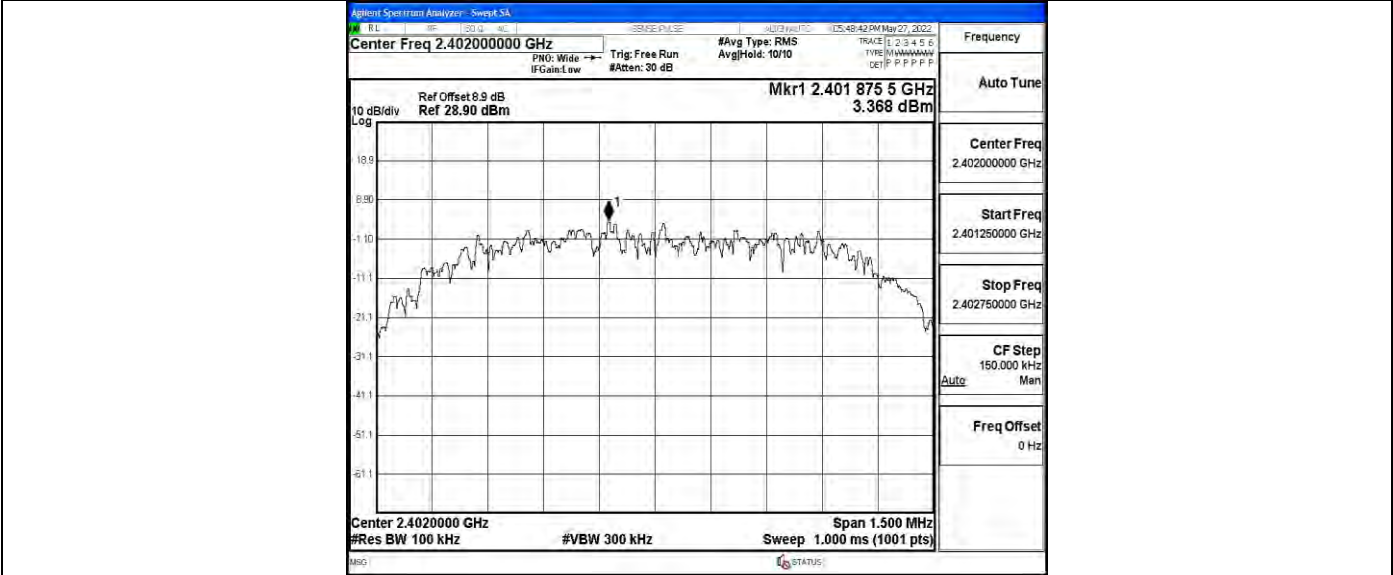
DH5 Ant1 2480 30~1000



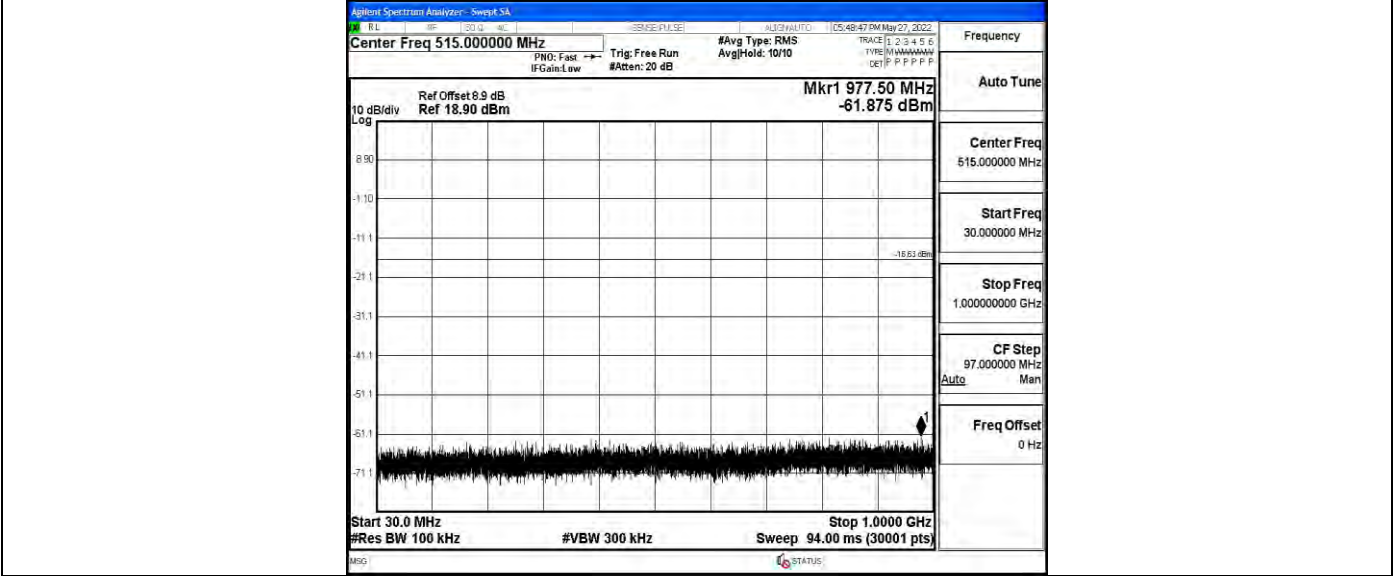
DH5 Ant1 2480 1000~26500



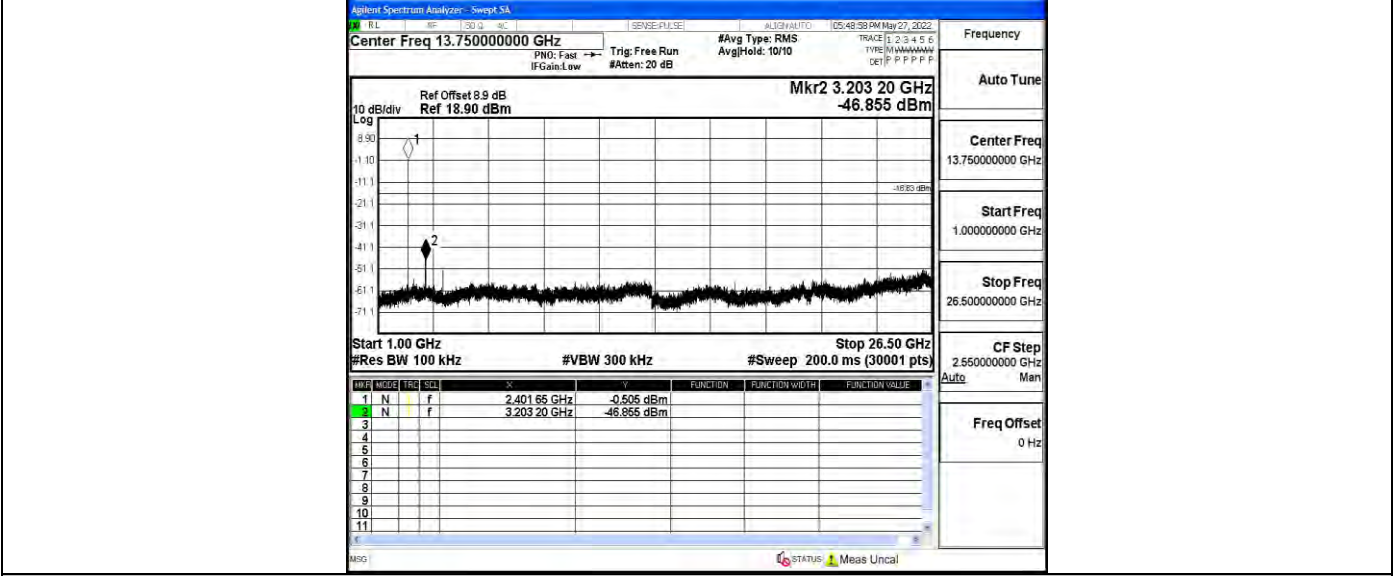
2DH5 Ant1 2402 0~Reference



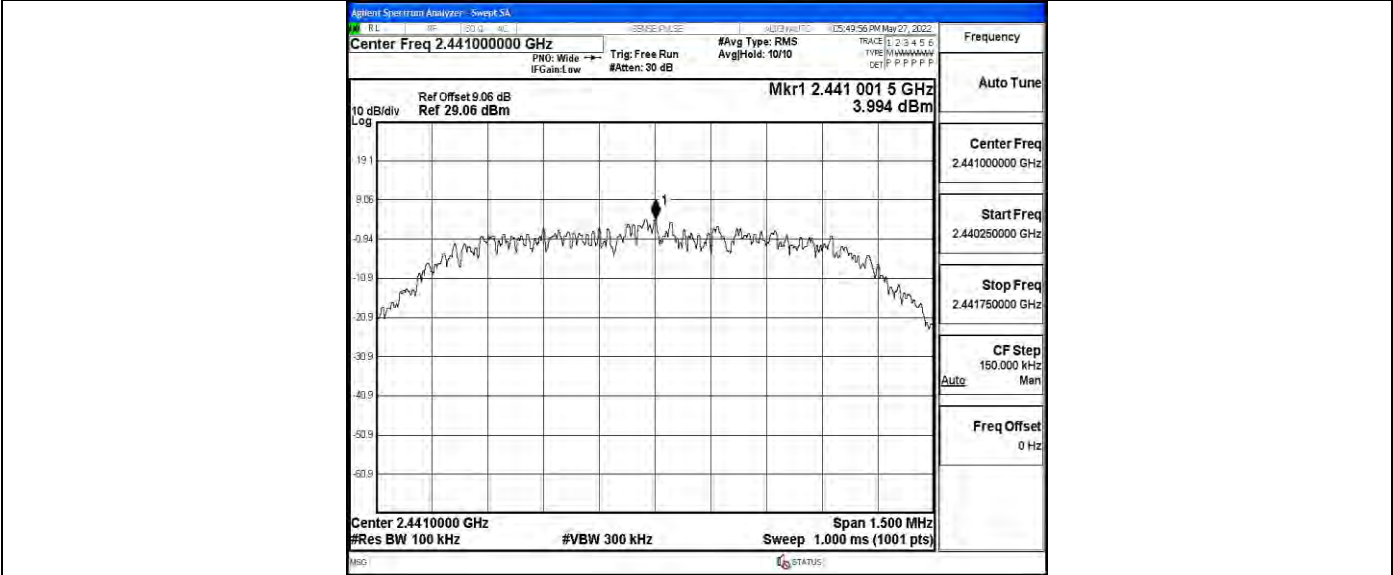
2DH5 Ant1 2402 30~1000



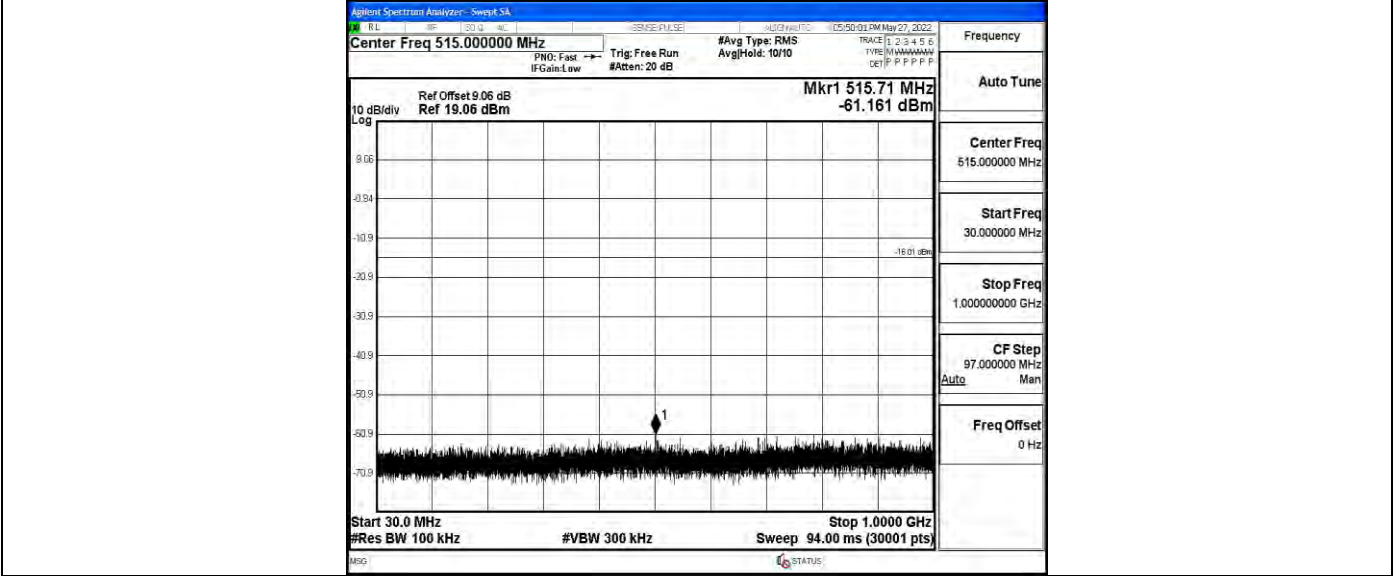
2DH5 Ant1 2402 1000~26500



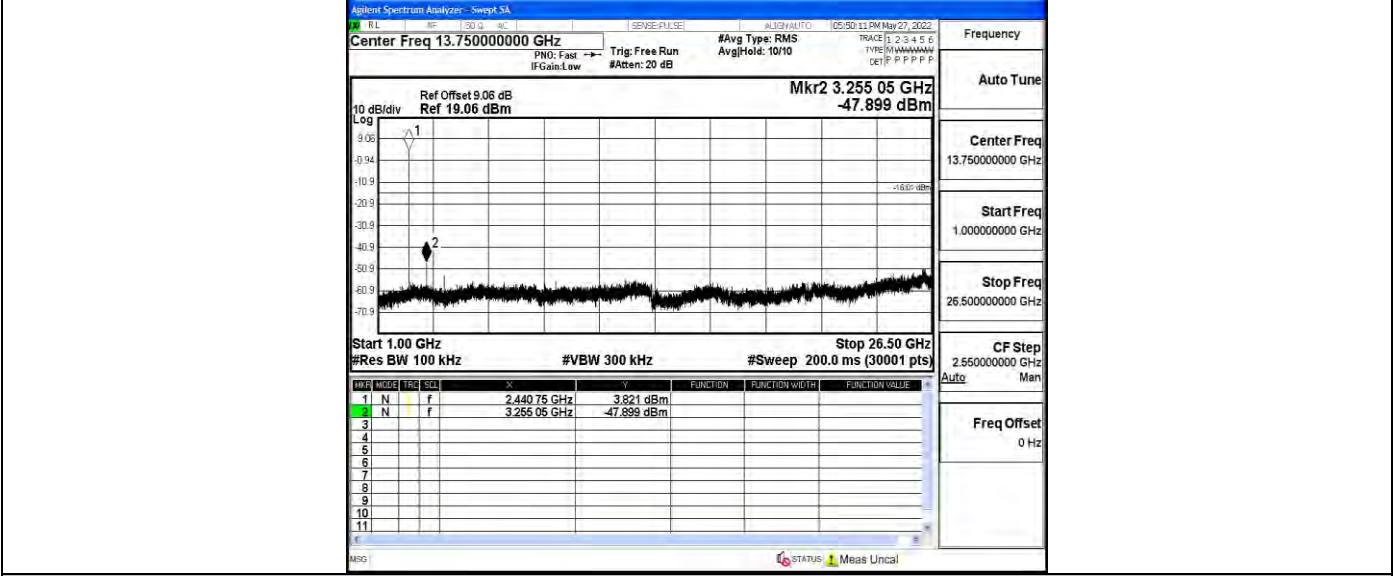
2DH5 Ant1 2441 0~Reference



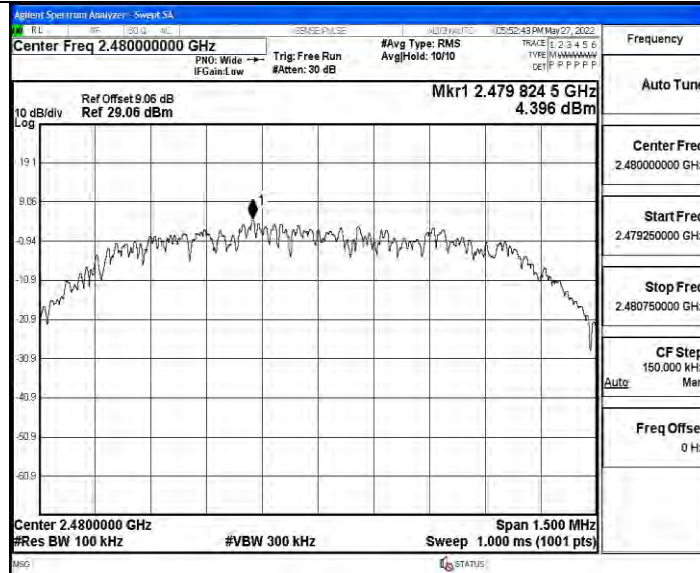
2DH5 Ant1 2441 30~1000



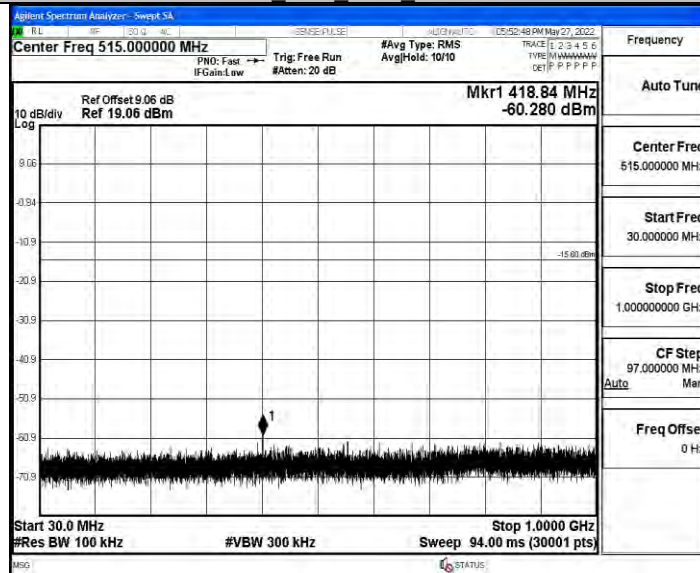
2DH5 Ant1 2441 1000~26500



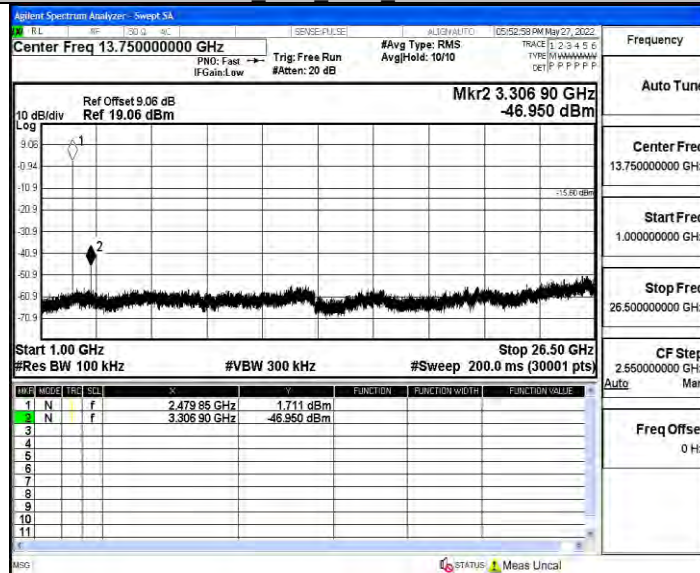
2DH5 Ant1 2480 0~Reference



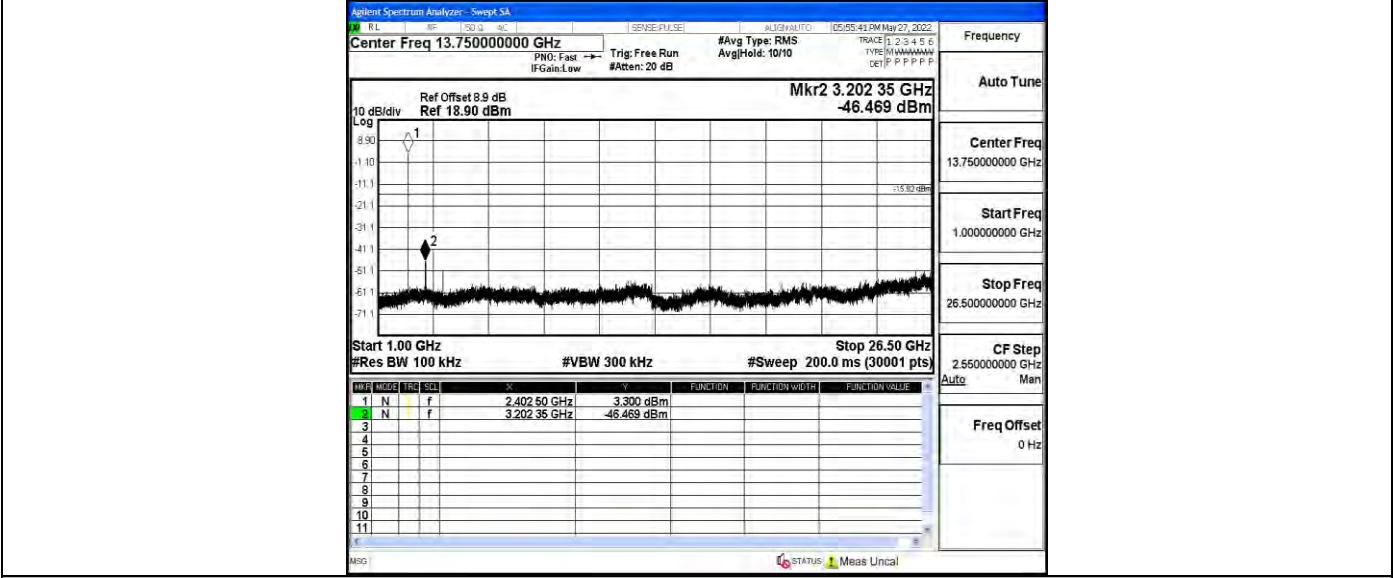
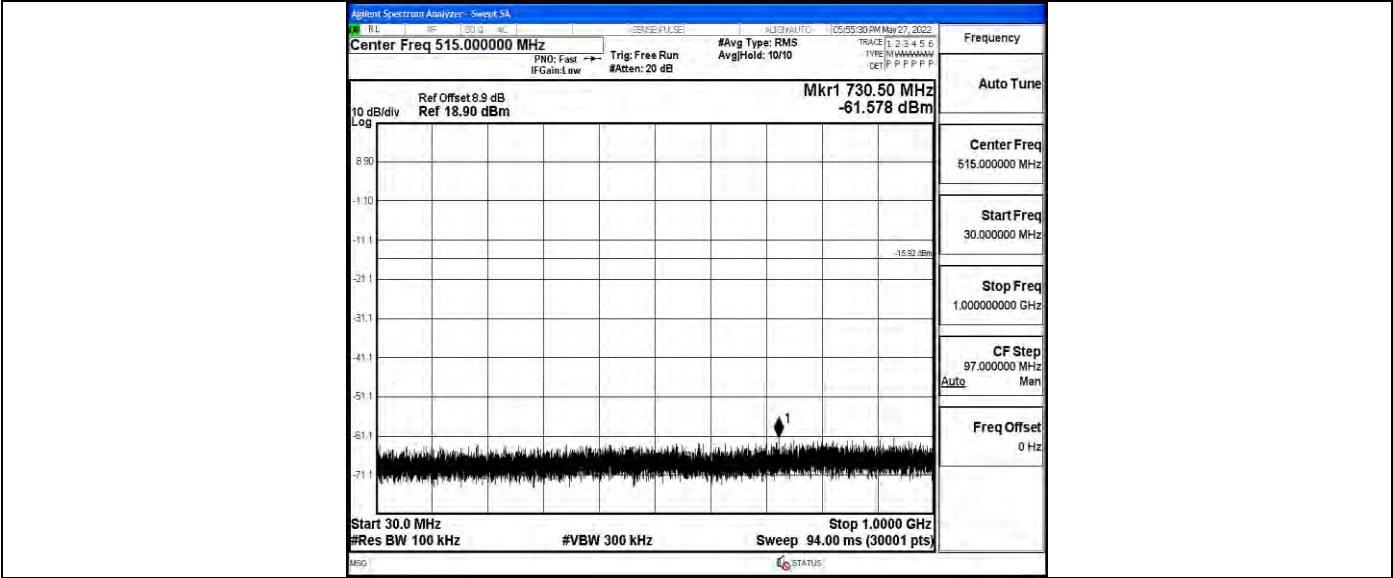
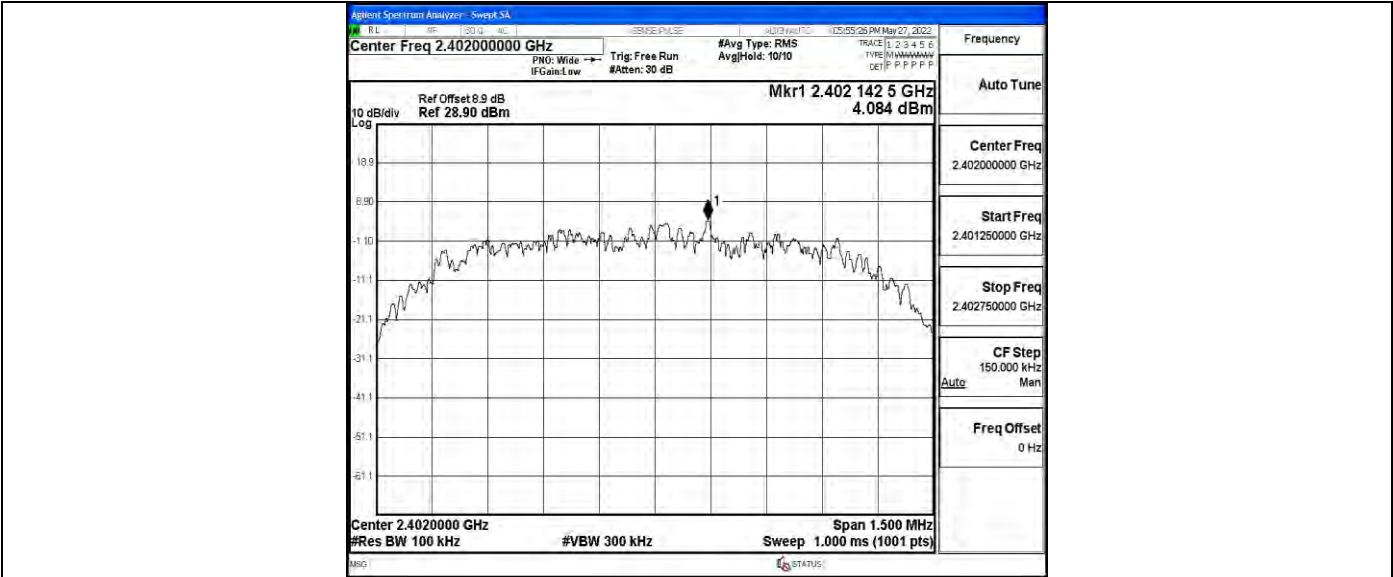
2DH5 Ant1 2480 30~1000

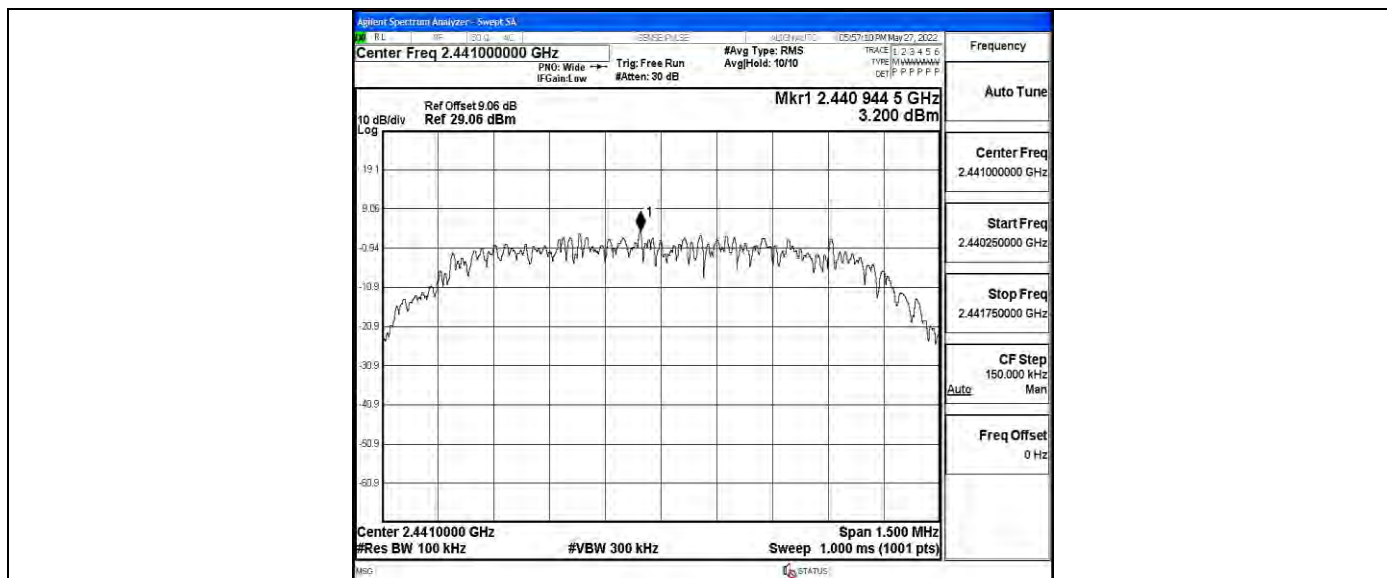


2DH5 Ant1 2480 1000~26500

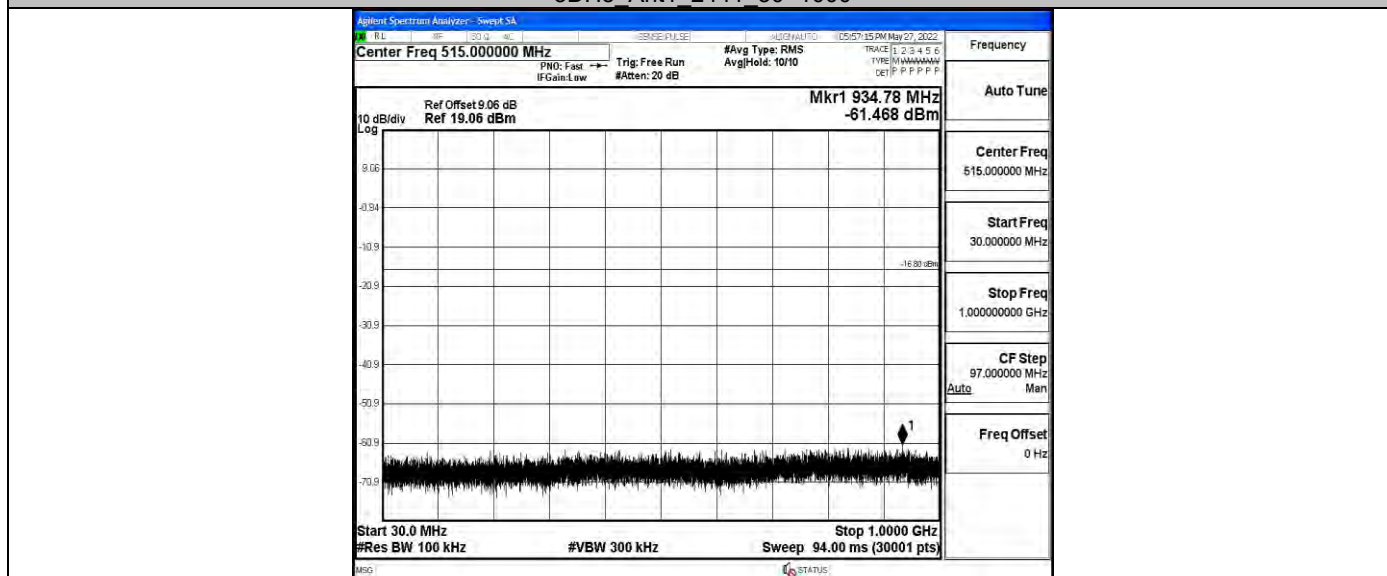


3DH5 Ant1 2402 0~Reference

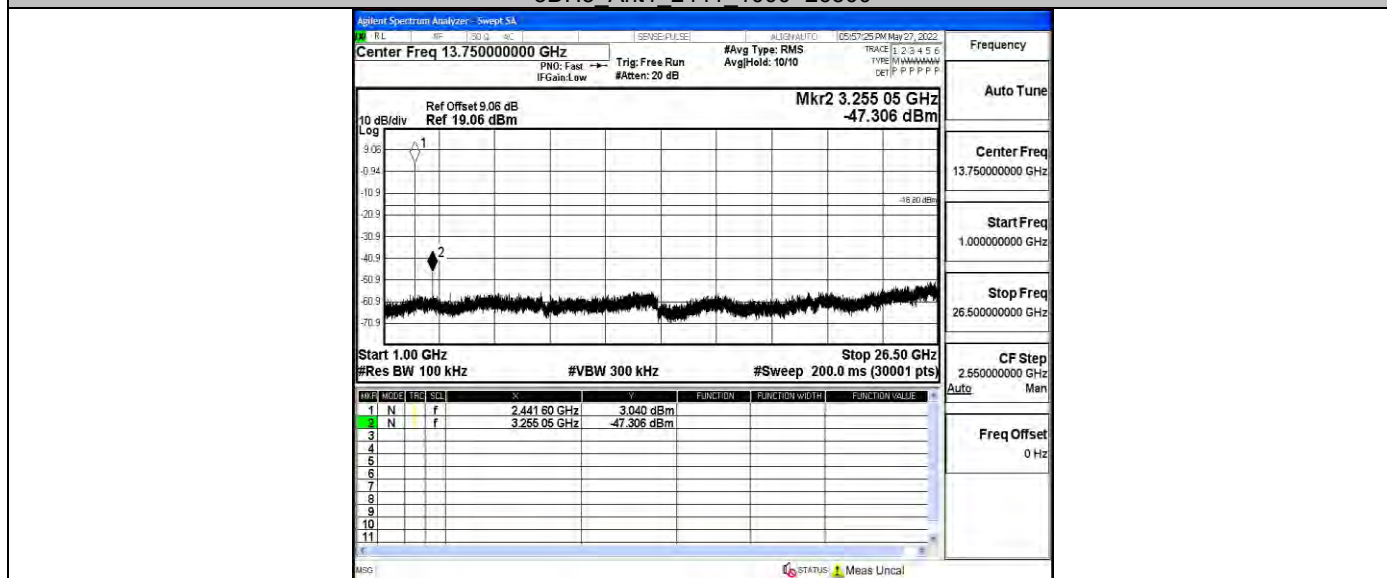




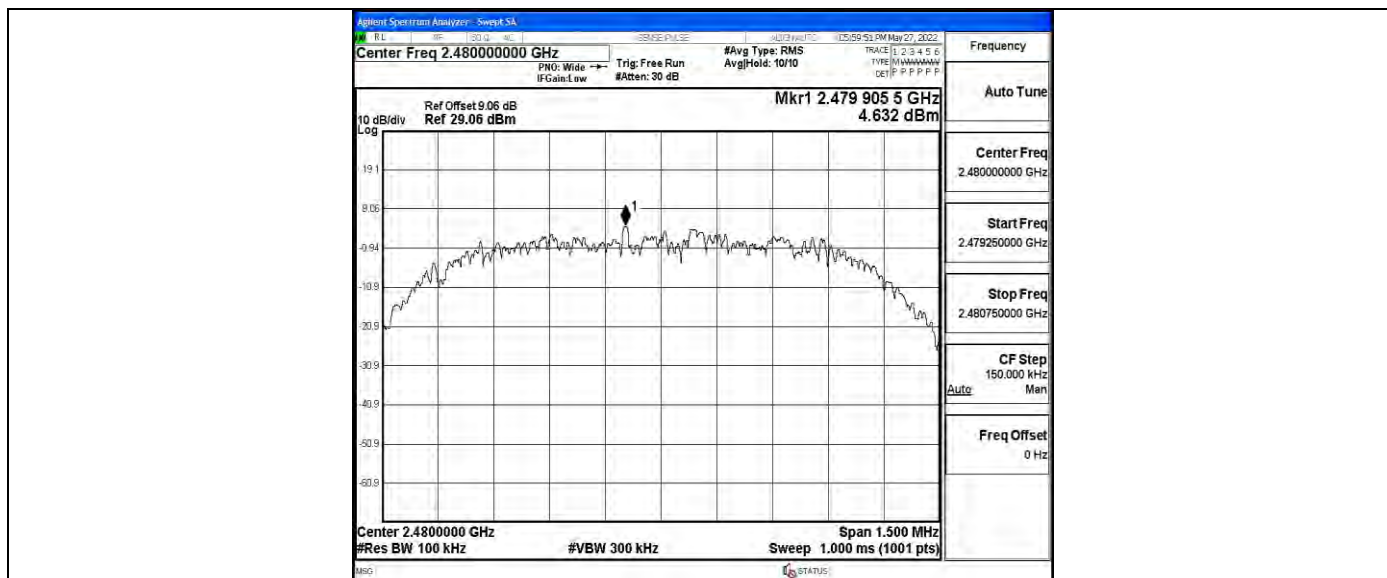
3DH5 Ant1 2441 30~1000



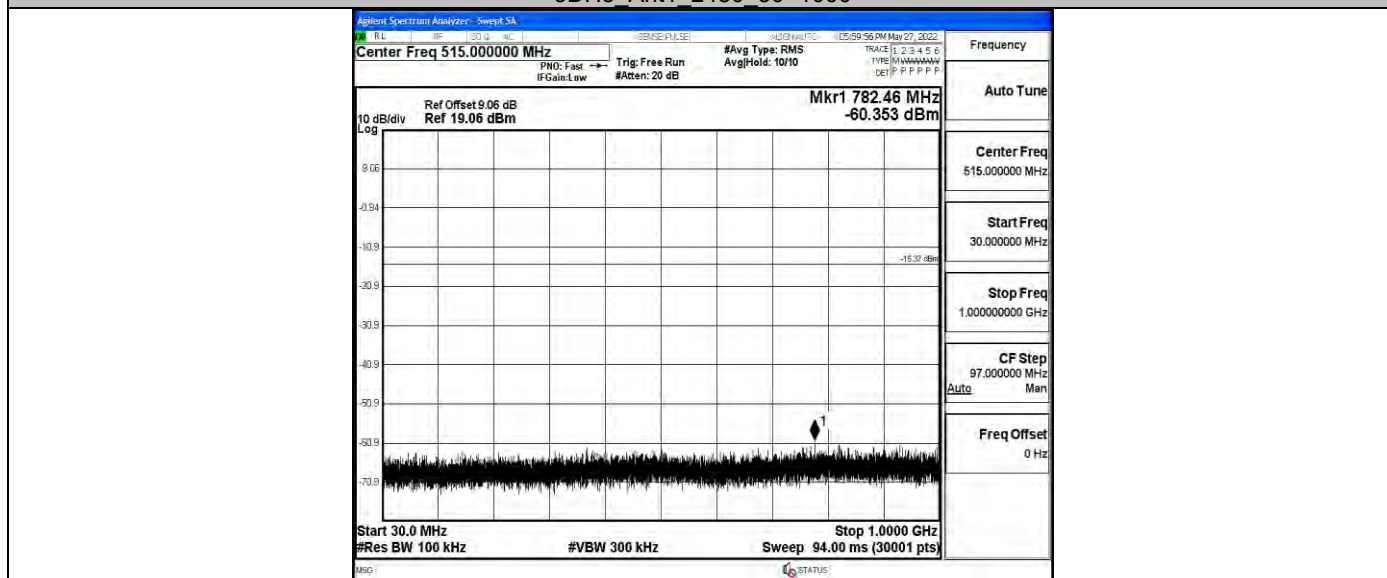
3DH5 Ant1 2441 1000~26500



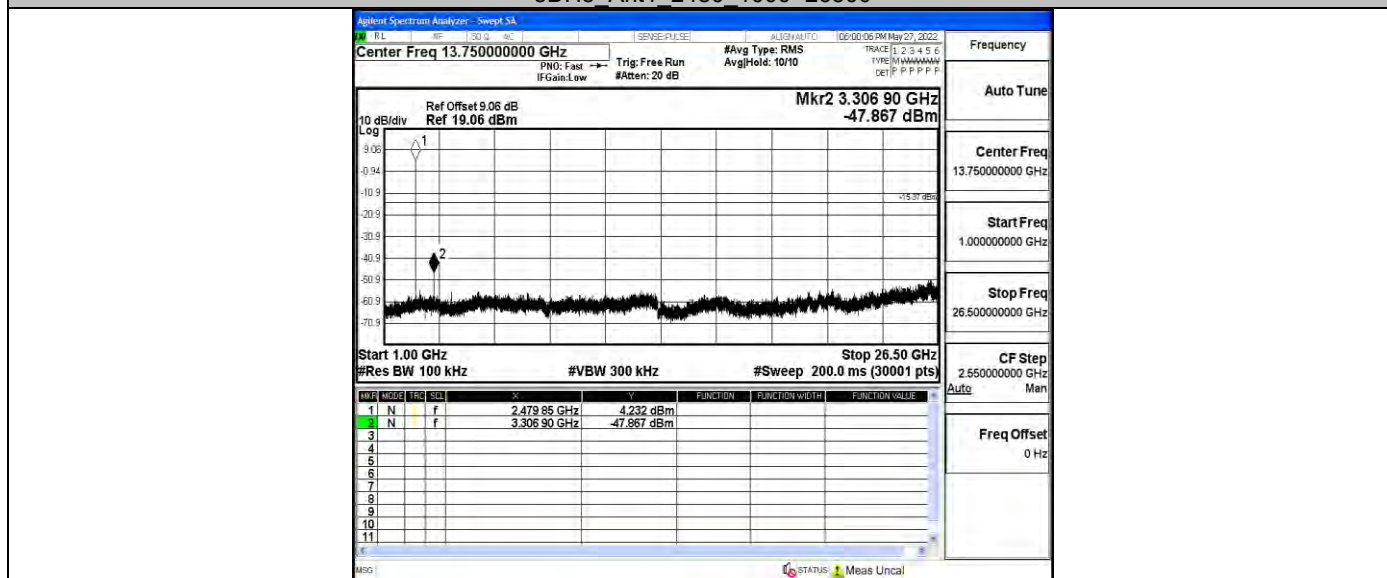
3DH5 Ant1 2480 0~Reference



3DH5 Ant1 2480 30~1000



3DH5 Ant1 2480 1000~26500

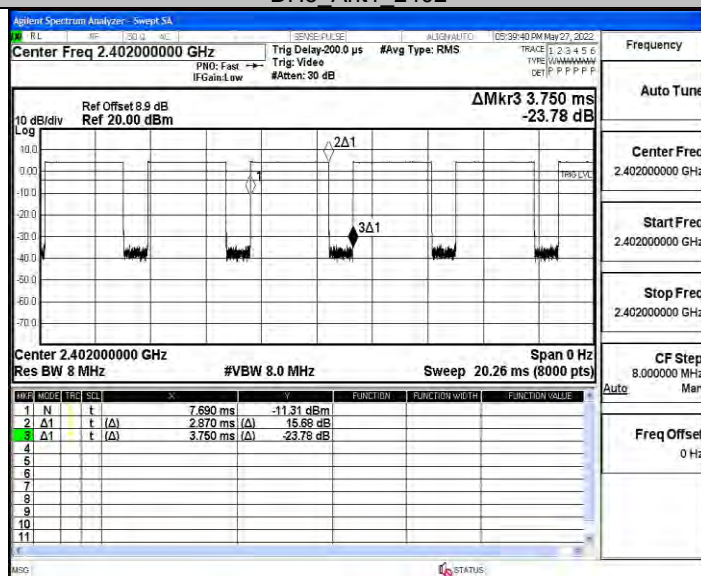


Appendix I: Duty Cycle
Test Result

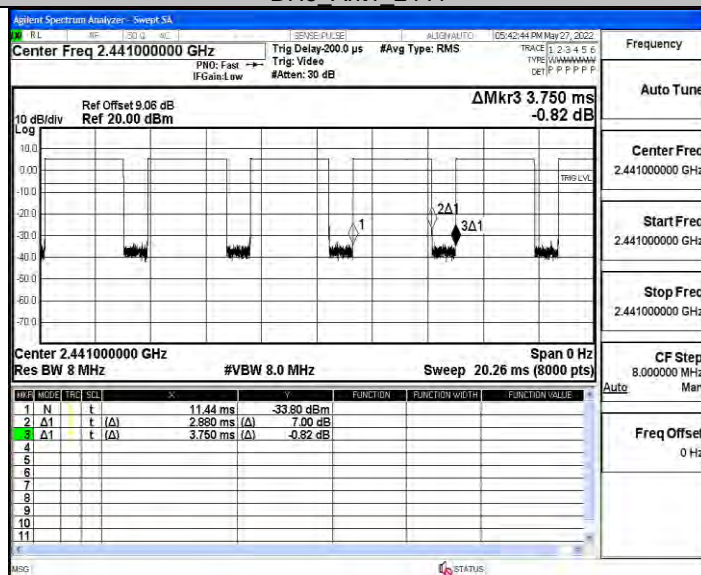
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.87	3.75	76.53	0.35
		2441	2.88	3.75	76.80	0.35
		2480	2.88	3.76	76.60	0.35
2DH5	Ant1	2402	2.87	3.75	76.53	0.35
		2441	2.88	3.75	76.80	0.35
		2480	2.88	3.75	76.80	0.35
3DH5	Ant1	2402	2.87	3.75	76.53	0.35
		2441	2.87	3.75	76.53	0.35
		2480	2.87	3.75	76.53	0.35

Test Graphs

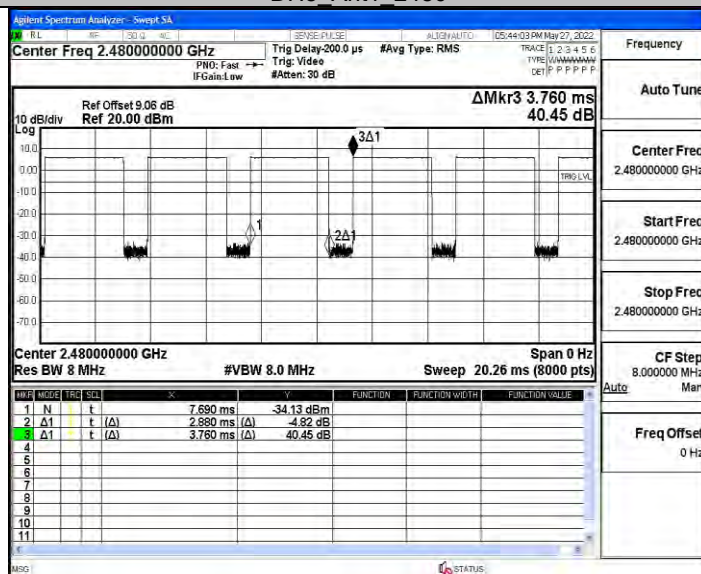
DH5_Ant1_2402



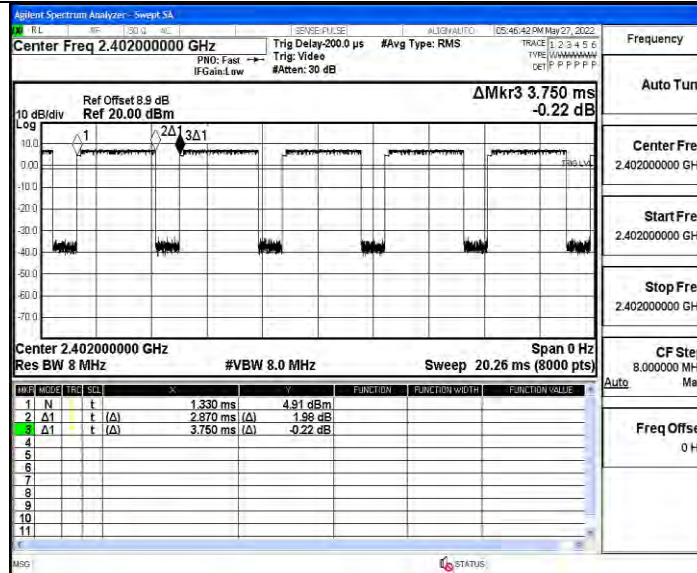
DH5_Ant1_2441



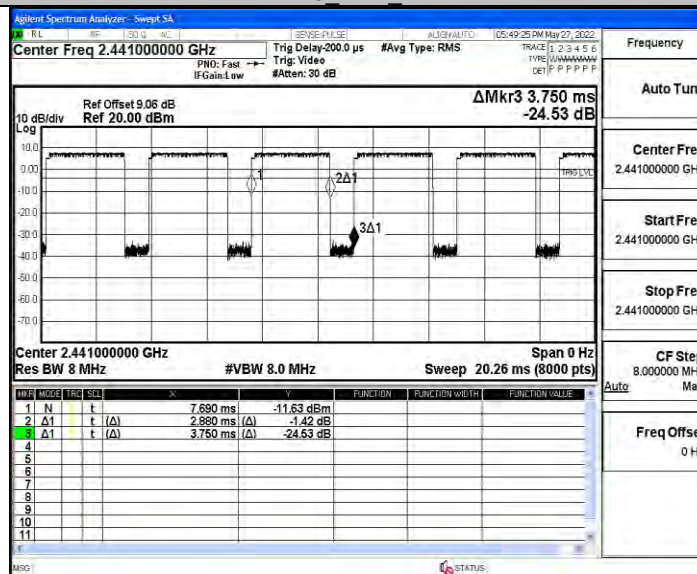
DH5_Ant1_2480



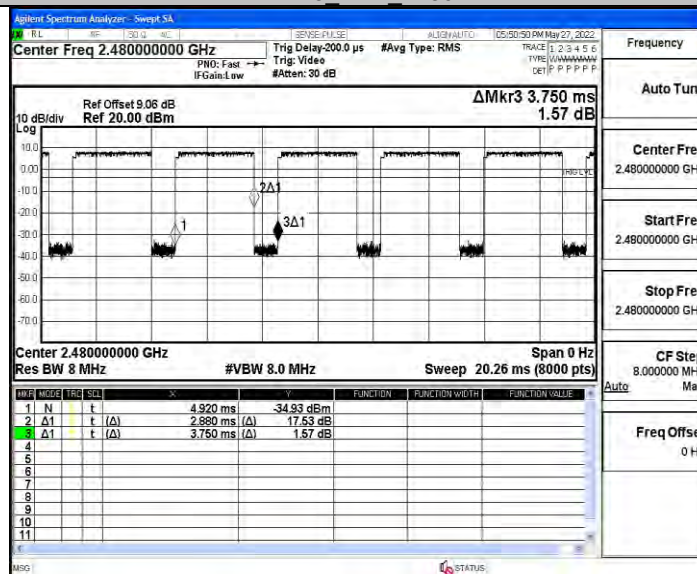
2DH5_Ant1_2402



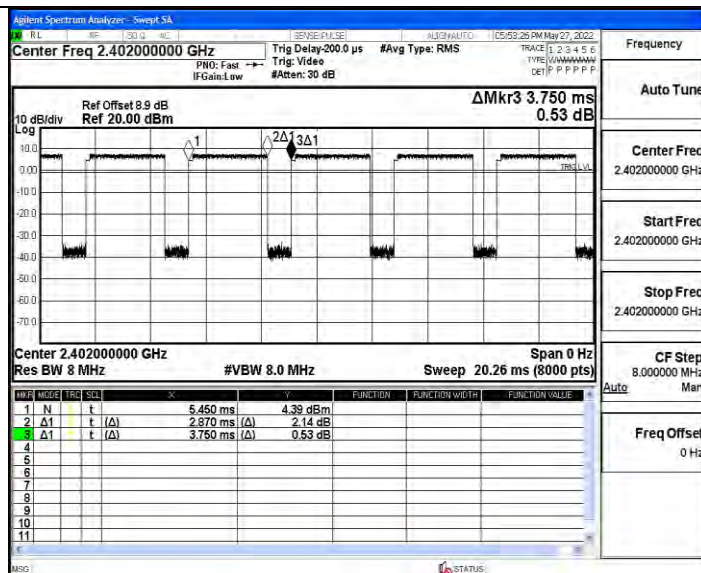
2DH5 Ant1 2441



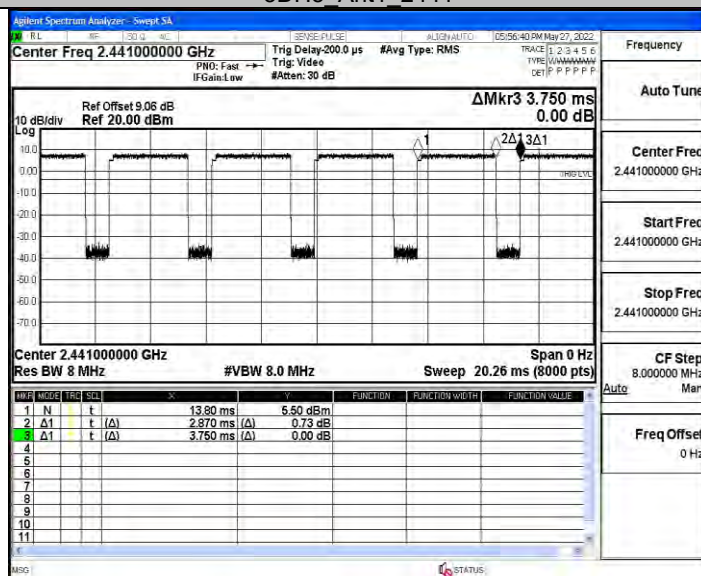
2DH5 Ant1 2480



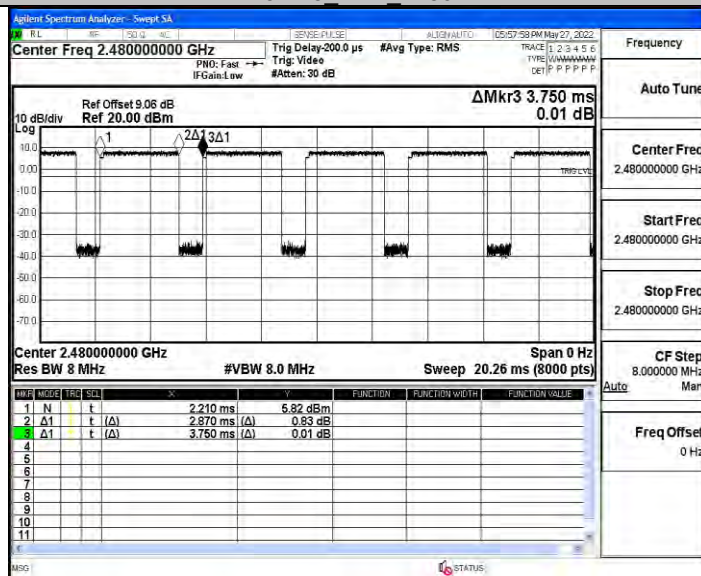
3DH5 Ant1 2402



3DH5 Ant1 2441



3DH5 Ant1 2480



Appendix J: Emissions in Restricted Bands

Test Result

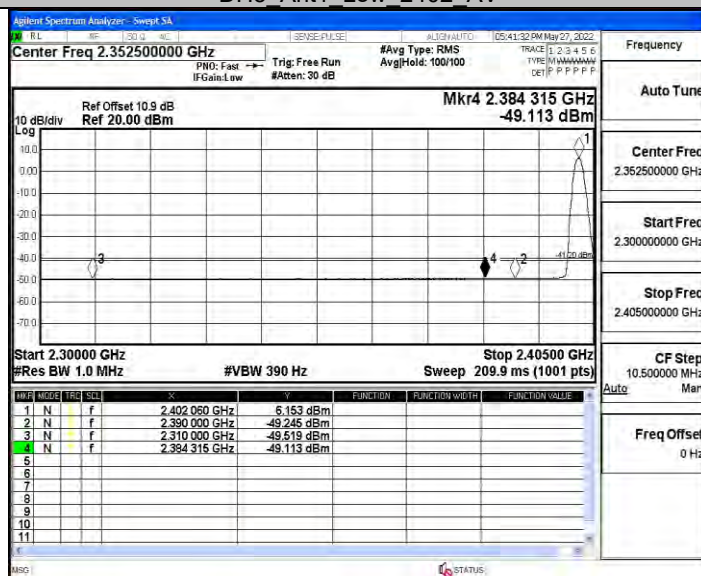
TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.52	≤-41.20	PASS
				AV	2384.315	-49.11	≤-41.20	PASS
				AV	2390.000	-49.25	≤-41.20	PASS
				Peak	2310.000	-43.82	≤-21.20	PASS
				Peak	2325.200	-38.66	≤-21.20	PASS
				Peak	2390.000	-43.25	≤-21.20	PASS
		High	2480	AV	2483.500	-47.63	≤-41.20	PASS
				AV	2483.520	-47.63	≤-41.20	PASS
				AV	2500.000	-48.57	≤-41.20	PASS
				Peak	2483.500	-40.02	≤-21.20	PASS
				Peak	2487.840	-39.46	≤-21.20	PASS
				Peak	2500.000	-42.62	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.48	≤-41.20	PASS
				AV	2387.675	-49.04	≤-41.20	PASS
				AV	2390.000	-49.27	≤-41.20	PASS
				Peak	2310.000	-40.27	≤-21.20	PASS
				Peak	2352.920	-39.05	≤-21.20	PASS
				Peak	2390.000	-42.72	≤-21.20	PASS
		High	2480	AV	2483.500	-46.62	≤-41.20	PASS
				AV	2483.520	-46.62	≤-41.20	PASS
				AV	2500.000	-48.43	≤-41.20	PASS
				Peak	2483.500	-40.24	≤-21.20	PASS
				Peak	2496.000	-39.13	≤-21.20	PASS
				Peak	2500.000	-40.44	≤-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-49.35	≤-41.20	PASS
				AV	2383.685	-49.02	≤-41.20	PASS
				AV	2390.000	-49.17	≤-41.20	PASS
				Peak	2310.000	-42.92	≤-21.20	PASS
				Peak	2313.860	-39.15	≤-21.20	PASS
				Peak	2390.000	-41.58	≤-21.20	PASS
		High	2480	AV	2483.500	-46.78	≤-41.20	PASS
				AV	2483.520	-46.78	≤-41.20	PASS
				AV	2500.000	-48.52	≤-41.20	PASS
				Peak	2483.500	-42.09	≤-21.20	PASS
				Peak	2483.920	-38.23	≤-21.20	PASS
				Peak	2500.000	-40.33	≤-21.20	PASS

Note :

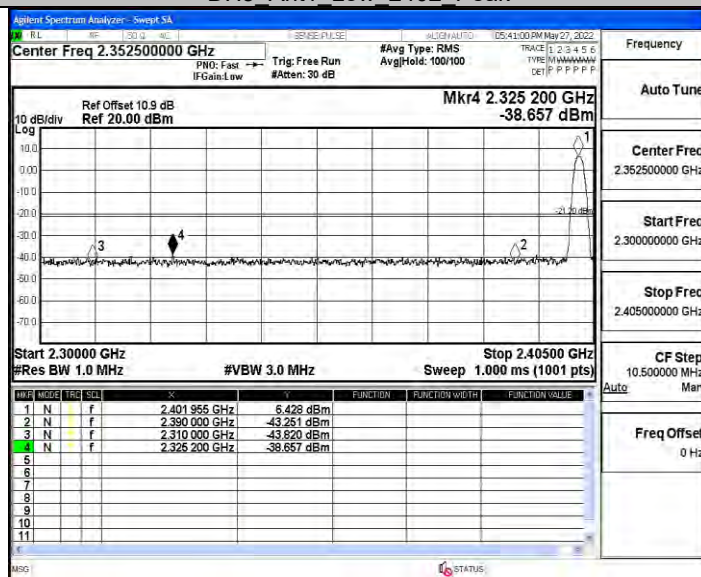
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

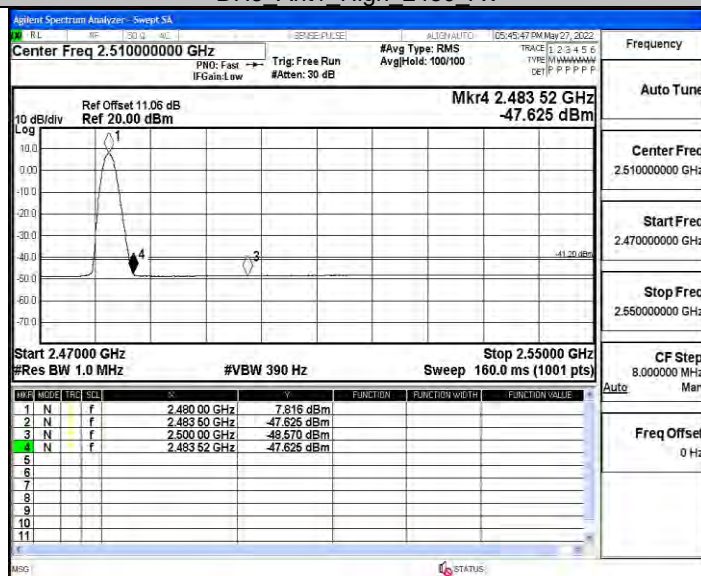
DH5 Ant1 Low 2402 AV



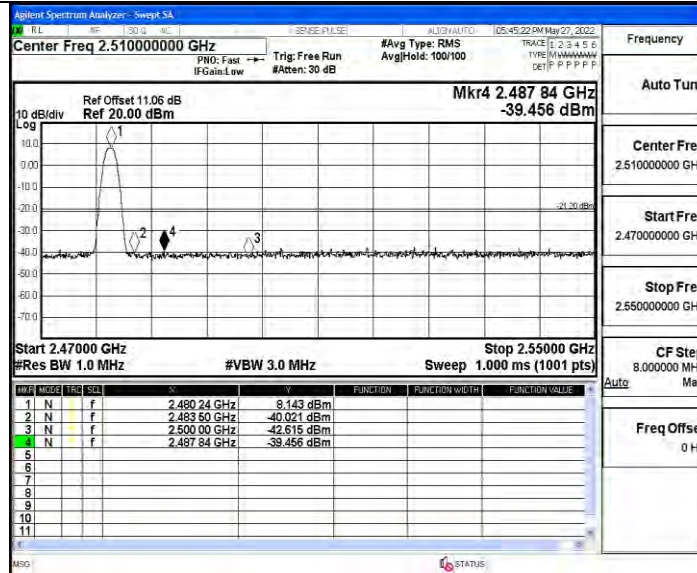
DH5 Ant1 Low 2402 Peak



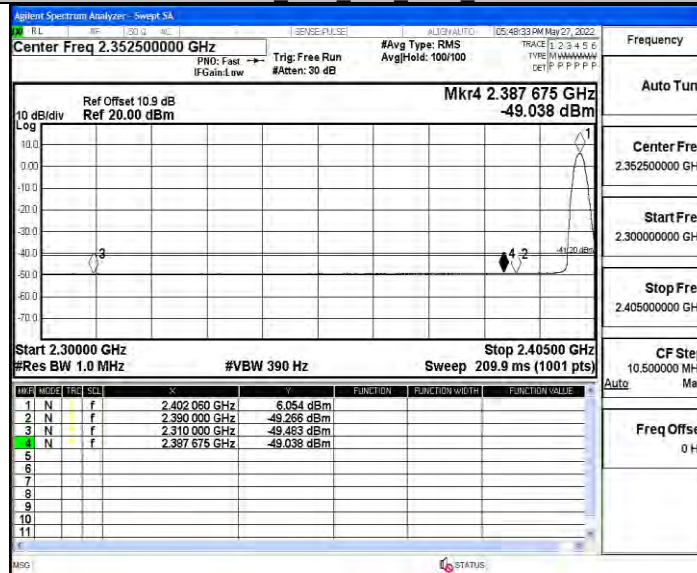
DH5 Ant1 High 2480 AV



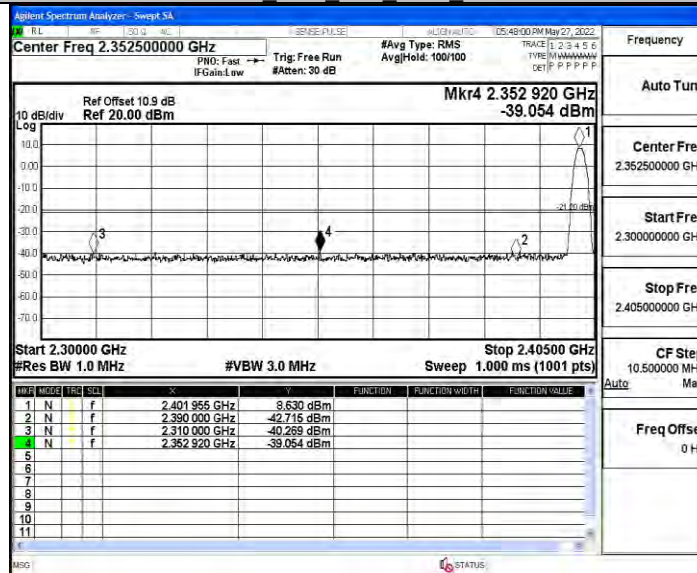
DH5 Ant1 High 2480 Peak



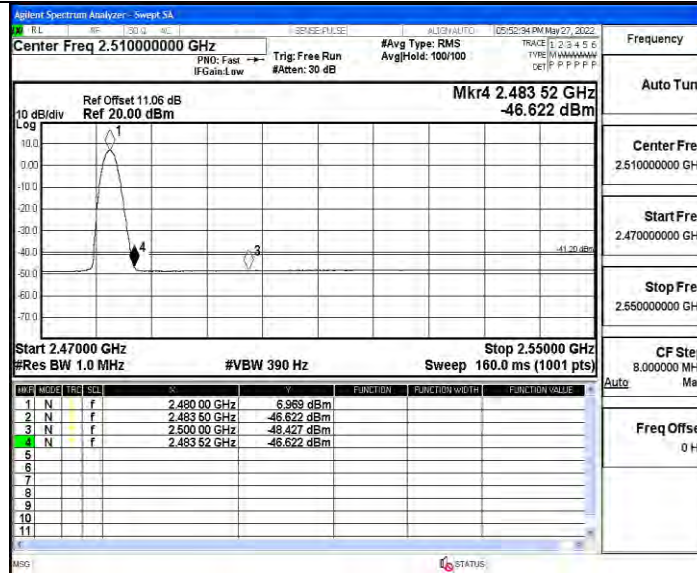
2DH5 Ant1 Low 2402 AV



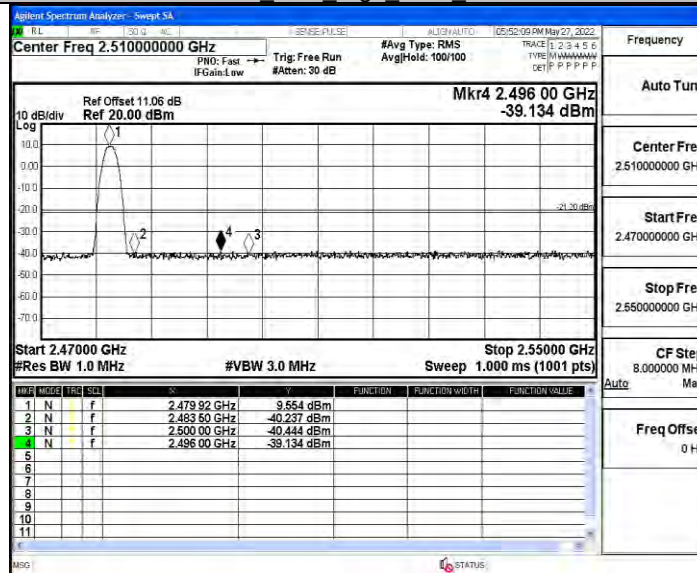
2DH5 Ant1 Low 2402 Peak



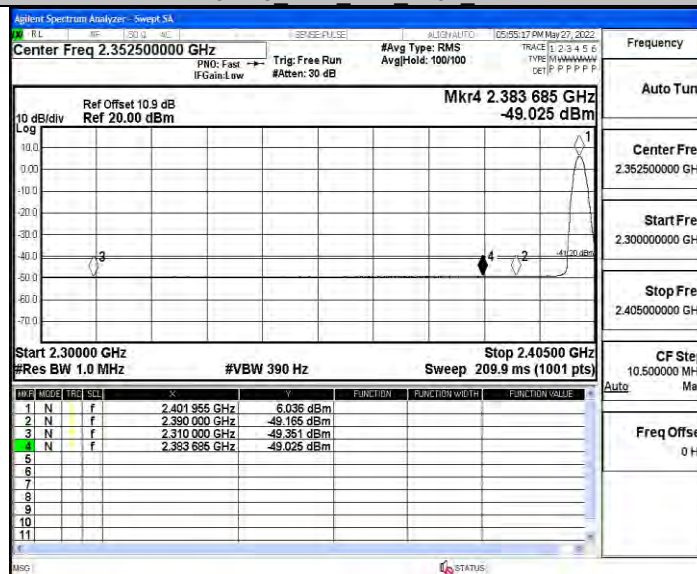
2DH5 Ant1 High 2480 AV



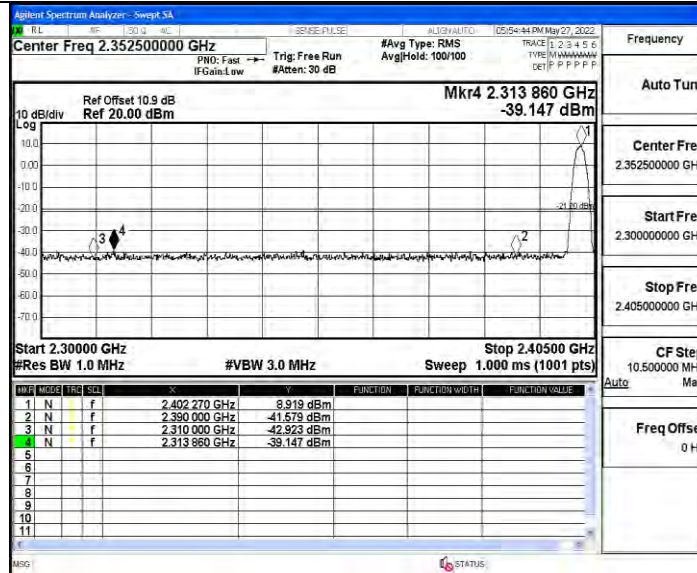
2DH5 Ant1 High 2480 Peak



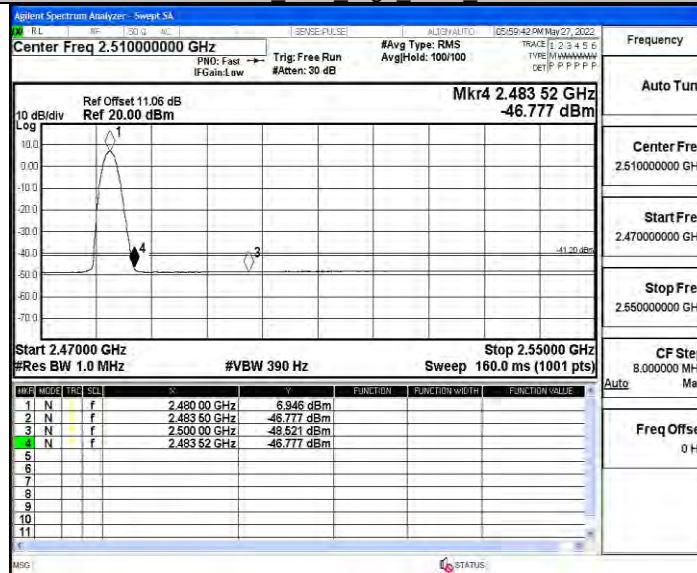
3DH5 Ant1 Low 2402 AV



3DH5 Ant1 Low 2402 Peak



3DH5 Ant1 High 2480 AV



3DH5 Ant1 High 2480 Peak

